



Forest Service

Region 5

Tahoe

Land and Resource Management Plan for the Tahoe NF

EIS

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Land and Resource Management Plan

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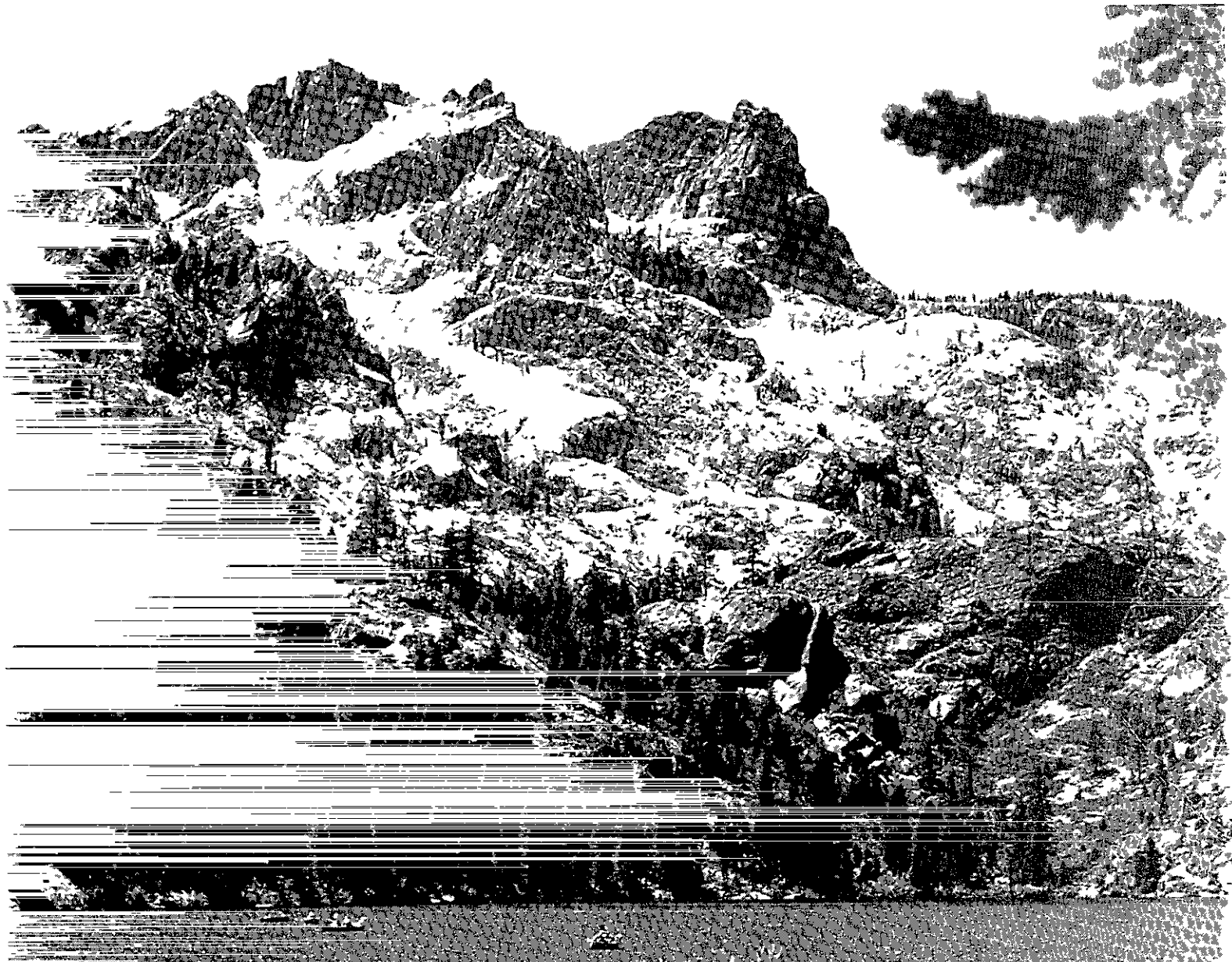
Pacific
Southwest
Region

Tahoe
National
Forest



Environmental Impact Statement

Tahoe National Forest
Land and Resource
Management Plan



ENVIRONMENTAL IMPACT STATEMENT
for the
TAHOE NATIONAL FOREST
LAND AND RESOURCE MANAGEMENT PLAN
1990

Nevada, Placer, Plumas, Sierra, and Yuba Counties, California

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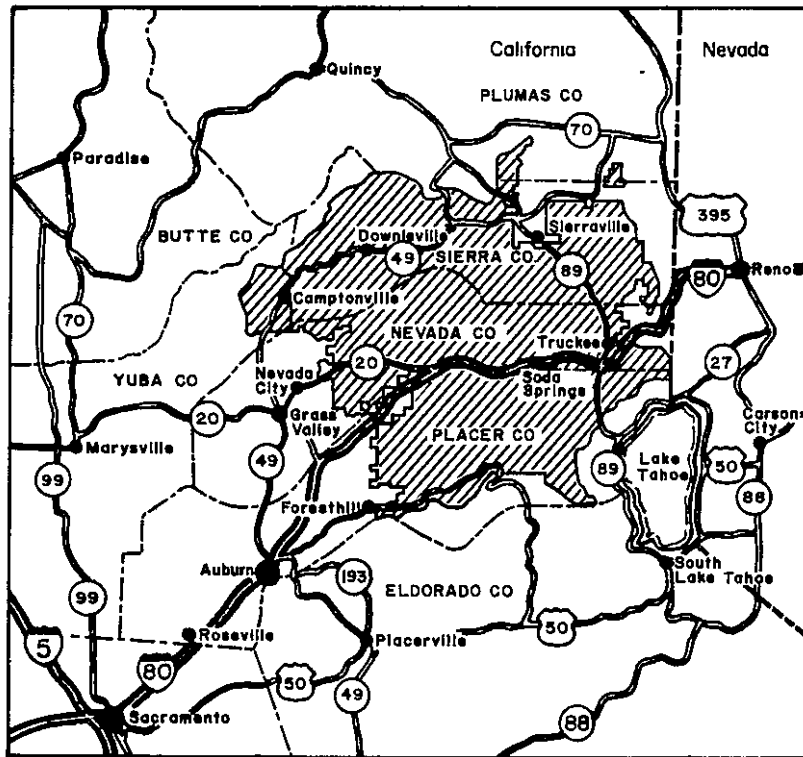
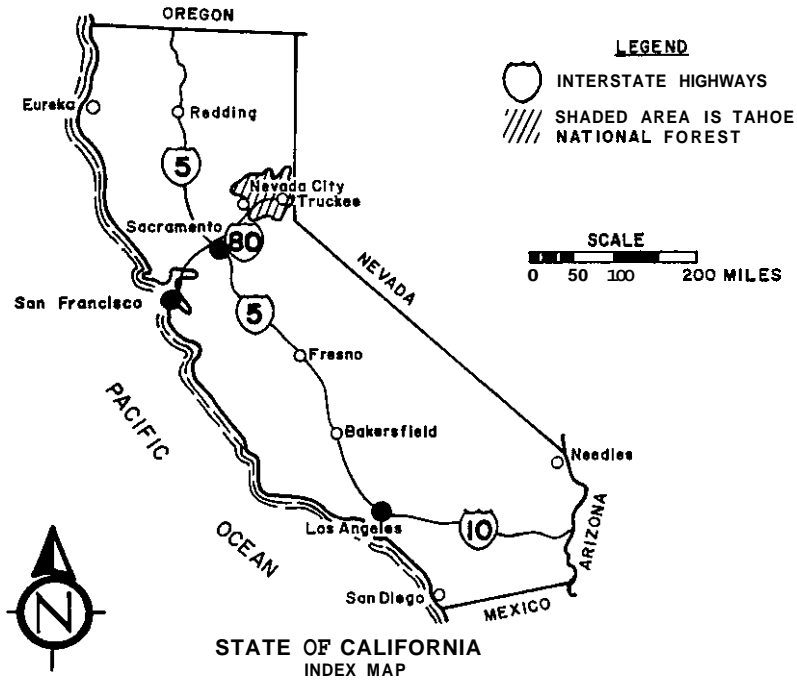
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Abstract A proposed action and five alternatives, including a 'no action' alternative, for a Forest Plan (Land and Resource Management Plan) for the Tahoe National Forest are described and compared. The alternatives provide different mixes of integrated management prescriptions, resulting in different levels of outputs, goods, and services at varying costs. The land area involved is 794,374 acres. The environmental consequences for the Forest Plan and alternatives are displayed.

The Forest Plan constitutes the Forest Service preferred alternative. The Tahoe National Forest Plan will guide management of the Forest for the next 10 to 15 years. Revisions and amendments can be made whenever necessary.

This Final Environmental Impact Statement responds to public comments. Copies of the Final Environmental Impact Statement have been sent to those agencies, organizations, or individuals listed in Chapter 6, and to those who specifically request a copy of the Final Environmental Impact Statement.

Vicinity Map



TAHOE NATIONAL FOREST INDEX MAP

0 5 10 15 20 40

SCALE IN MILES

TAHOE NATIONAL FOREST FINAL ENVIRONMENTAL IMPACT STATEMENT

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Building Squaw Valley Ranger Station, 1907

SUMMARY OF THE FINAL ENVIRONMENTAL IMPACT STATEMENT

BENEFITS OF FOREST PLAN

Each National Forest in the country is developing a Forest Plan which looks into the future to coordinate all its resources and activities in relation to the needs of the public. The Tahoe National Forest (TNF) Plan will benefit us all because it:

- o Involves you in deciding what issues are of special importance on the TNF
- o Provides a common planning approach for all National Forests throughout the county.
- o **Uses** the expertise of various specialists, such as wildlife biologists and soil scientists, who work with management to develop a range of choices for managing the Forest for the next 10 to 15 years.
- o Responds to major public issues, Forest Service management concerns, and resource development opportunities.
- o Enables planners to better consider economic efficiency as well as production of resources through the **use** of more detailed information.
- o Considers all resource plans within the Forest at one time, instead of considering each one separately.
- o Displays the standards and guidelines by which the Forest will be managed
- o Establishes a better system for monitoring and evaluating management actions.
- o Provides **for** review every 5 years to determine the need for revision, and will be revised at least every 15 years.

The Environmental Impact Statement for the TNF Land and Resource Management Plan describes the analysis process which led to the development of a Forest Plan. This summary condenses each chapter and highlights the major items discussed in that chapter.

ORGANIZATION OF SUMMARY

- Chapter 1 explains the background and purpose of developing the Forest Plan
- Chapter 2 tells how alternatives were developed and describes each alternative, including the outputs that would result if the alternative were implemented.
- Chapter 3 summarizes the existing environment on the TNF, including physical characteristics and resource **use**.
- Chapter 4 discloses the environmental consequences that would result if each alternative were implemented.
- Chapter 5 lists the people who assisted in the planning process
- Chapter 6 lists agencies, organizations, and people who received copies of the EIS and Forest Plan

CHAPTER I PURPOSE AND NEED FOR ACTION

HISTORICAL AND LEGISLATIVE FRAMEWORK

In 1974, Congress acted upon the need for coordinated and long-range planning of the uses and resources provided by the National Forests. Two legislative acts were passed: The Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), and the National Forest Management Act of 1976 (NFMA), amending RPA. These require that comprehensive, long-range Forest Plans replace the separate and often uncoordinated resource management plans.

Additional legislation required Forests, before developing a complete Forest Plan, to investigate and make public:

- 1 Alternative approaches which could be used in developing the plan.
- 2 The environment to be affected by the plan.
- 3 Anticipated environmental consequences of the alternatives.

This Environmental Impact Statement addresses these major subjects as required by the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations.

Forest Plans form only one part of the Forest Service planning framework. Based on information from the Regions, the National RPA Recommended Program establishes direction and assigns targets to the Regions for producing goods and services. Each Region in turn provides direction and allocates its share of the national production levels to the Forests; each Forest Plan validates the levels or provides a basis for changing the production levels assigned by the Regions.

PUBLIC INVOLVEMENT

Although the broad goals and objectives are established by higher levels of Forest Service management, each Forest has a range of choices in meeting these goals. For example, a Forest can emphasize one resource, such as recreation, if that is an important issue to local people. This is why public involvement is so important throughout the planning process. When the TNF Plan was in its early stages several years ago, many individuals, organizations, and agencies helped pinpoint issues of special importance to them. These issues were incorporated into the planning process and taken into consideration when alternatives were developed.

The Forest received over 12,000 letters commenting on the Draft EIS and Draft Plan. Clearly, the public response indicated a strong interest in management of the TNF. Comments ranged from supporting alternatives that emphasize commodity production such as timber and range, to alternatives that provide for amenity values such as visuals, wildlife, soil productivity, and water quality. Two of the alternatives presented in the Final Environmental Impact Statement, CMD and NMK, were developed by representatives of the timber and environmental communities, respectively. Development of the Forest Plan was guided in part by the public comment, and through the participation of both timber industry and the environmental community.

FEIS

The Final Environmental Impact Statement (FEIS) describes a proposed action (preferred alternative) and five other alternatives for the management of the land and resources of the TNF. Each alternative addresses issues differently, provides for the use and protection of resources, and meets all legislative requirements. Every alternative generates a different mix of goods and services and maximizes benefits to the public in an environmentally sound manner.

The FEIS also describes the affected environment and discloses environmental consequences of each potential decision. It is written to meet the format and guidelines set by the National Environmental Policy

Act (NEPA). The proposed action is the alternative chosen by the Regional Forester based on advice and recommendations from the Tahoe National Forest Management Team.

ISSUES, CONCERNS, AND OPPORTUNITIES

The Tahoe National Forest Land and Resource Management Plan is formulated to address public issues and management concerns related to the Forest. These issues and concerns (referred to as issues in this EIS) and the associated questions were identified by the Interdisciplinary Team and indicate the scope and nature of the analysis needed for the **EIS**. The **issues** represent important reasons for *considering* changes in the current management direction and are instrumental in formulating alternatives and understanding the consequences of implementing any one of the alternatives.

The Pacific Southwest Regional Forester notified the public and other agencies of intentions to prepare a Land and Resource Management Plan for the TNF in the Federal Register, August 18, 1979. In November 1979, and again in November 1983, the Forest Supervisor published notices in local newspapers and in the Tahoe Planner newsletter that meetings would be held to accept public comment. Eight meetings to receive public comment were held in the TNF area of influence.

The meeting held in 1983 was to receive comments on seven additional roadless areas added to the planning process as the result of the October 30, 1982, revised NFMA regulations.

The Interdisciplinary Team identified and evaluated public issues, management concerns, and resource **use** and development opportunities, including those identified through public participation activities and coordination with other Federal agencies and State and local governments throughout the planning process. Nine major issues were identified. These issues were approved by the Regional Forester and addressed in the planning process. Enacting the California Wilderness Act of 1984 resolved ~~in~~ terms of wilderness designation the inventoried roadless area issue (**Issue #4**) for this round of Forest planning.

In addition, the Pacific Southwest Regional Guide deferred 11 Regional **issues**, concerns, and opportunities to be answered during the Forest planning process. These have been incorporated into the list of Forest issues. These issues were addressed in at least one alternative in the DEIS. More detailed information on the scoping process and each of the issues can be found in FEIS Appendix A.

Following release of the DEIS and Draft Forest Plan and a five-month comment period, a list of 12 major issues was developed. This list **was** the result of analysis of the comments contained in approximately 12,000 letters of input and oral testimony from two formal public hearings on the DEIS and Draft Plan. Some of these 12 issues are the same as those contained in the initial issue list, others are a variation of those initial issues, and *others* are new. The Forest Service response to the public comment can be found in FEIS Appendix A.

Following are.

A listing of initial issues.

A listing of the 12 major issues resulting from the Draft document review.

A listing and analysis of the relationship between the initial and the new major issues.

Initial Issues

#1. Ownership Patterns and Land Uses

In what ways and to what extent can the Forest Service lessen or resolve conflicts in **use** between National Forest, private, and other public ownerships within the Tahoe National Forest boundary? Some of these conflicts result from the conflicting desires and needs of different owners and the public in their resource management objectives.

#2. Minerals

What emphasis by the Forest Service should be placed on the surface management of mineralized areas within the Tahoe National Forest? This includes both locatable and leasable mineral resources.

#3. Energy

How should management of the Tahoe National Forest contribute to conserving energy and meeting future energy needs?

#4. Inventoried Roadless Areas

How should all inventoried roadless areas be managed on the Tahoe National Forest?

This issue was resolved in terms of wilderness designation by enactment of the California Wilderness Act of 1984, which designated the 18,705 acre Granite Chief Wilderness and released the 10 remaining roadless areas to other multiple uses for this round of planning. (See FEIS Appendix A)

#5. Facilities

How can the Tahoe National Forest management, operation, and development of its facilities (roads, trails, administrative facilities) be optimized with respect to user interests, resource management and human resource needs, private landowner concerns, and economic efficiency?

#6. Forage, Wood, and Soils

How much area of the Tahoe National Forest should be managed for renewable commodity outputs (forage and wood)? How intensively should vegetation be managed to optimize commodity outputs? What Forest Service emphasis should be placed on the soil resource to maintain or enhance productivity?

#7. Water

How should the management of Tahoe National Forest resources respond to the demands and allocations for water quality, quantity, storage, and transmission?

#8. Recreation

To what extent should Tahoe National Forest land be allocated for recreation and scenic purposes? What should be the mix of recreation uses on Tahoe National Forest land?

#9. Fish and Wildlife Habitat

What Forest Service emphasis should be placed on wildlife habitat to maintain or enhance productivity, quality, and diversity?

Major Issues resulting from the Draft document review:

~~##~~ **1. Spotted Owls**

How many spotted owl habitat areas (SOHA's) should be established on the Tahoe National Forest and how should they be managed?

#2. Viable Populations/Diversity

How shall the Tahoe National Forest comply with National and Regional direction to maintain diversity and viable populations of animals?

#3. Budget

What effect will reduced budgets have on the implementation of the proposed Forest Plan?

#4. Roadless Areas

How should existing roadless areas be managed?

#5. Herbicide Use

Should herbicides be used on the Tahoe National Forest?

#6. Mt. Lola

How should the Lola Management Area be managed?

#7. Urban/Rural Wildland Interface

How should the Forest Service manage National Forest System lands that are adjacent to or affected by private lands, particularly those private lands developed or developing within this planning period for recreation, rural, residential, urban, or commercial uses.

#8. Soil Erosion/Long-Term Soil Productivity

With what practices can intensive timber management be conducted on Forest lands while maintaining soil productivity?

#9. Riparian/Streamside Management Zones

What level of management is acceptable in riparian areas/streamside management zones that still protects riparian-dependent resources?

#10. Visual Quality

How should the visual resource be managed on the Tahoe National Forest?

#11. Clearcutting

What should be the role of clearcutting in meeting the vegetative management objectives of the Tahoe National Forest?

#12. Timber Supply

What should be the amount of timber supplied by the Tahoe National Forest?

Relationship between the **Initial** and new major issues:

This will be shown by comparing the new issues to the initial issues

#1 Spotted Owls - a new issue.

#2 Viable Populations/Diversity - within parameters of #9. Fish and Wildlife Habitat

#3. Budget - a new issue.

#4. Roadless Areas - within parameters of #4. Inventoried Roadless Areas and #8 Recreation

#5. Herbicide Use - within parameters of #6 Forage, Wood, and Soils.

- #6. Mt Lola - a new issue
- #7 Urban/Rural Wildland Interface - within parameters of #1 Ownership Patterns.
- #8 Soil Erosion/Long-Term Soil Productivity - within parameters of #6. Forage, Wood, and Soils.
- #9. Riparian/Streamside Management Zones - within parameters of #7 Water.
- #10 Visual Quality -within parameters of #8 Recreation
- #11. Clearcutting - within parameters of #6 Forage, Wood, and Soils.
- #12. Timber Supply - within parameters of #6. Forage, Wood, and Soils.

CHAPTER 2 ALTERNATIVES INCLUDING THE PROPOSED ACTION

FORMULATING ALTERNATIVES

Six different approaches to resolving conflicting issues and reducing adverse environmental effects are described by alternative. They were formulated within given criteria of laws, regulations, directions, public issues, TNF management concerns, and the physical capabilities of the Forest to produce goods. Each would provide the public with a diverse mix of goods and services, and develop resources to varying degrees. Many other alternatives were considered and rejected from detailed study. Reasons included a significant departure from the multiple-use concept, not adequately addressing **issues**, or inefficiency. The six alternatives that were selected to be analyzed in detail are described next.

ALTERNATIVES CONSIDERED IN DETAIL

Alternative	Name
PRF	Preferred
CUR	Current Management
RPA	1980 RPA
CMD	Commodity
NMK	Nonmarket
UNE	Uneven-aged

Resource outputs, costs, and benefits are estimated for five time periods of ten years each (50 years). The alternatives also consider those resources that cannot be qualified in terms of dollars or other units, such as scenic beauty or maintenance of threatened and endangered species habitat.

ALTERNATIVE DESCRIPTIONS

The themes, emphases, and issues for the six alternatives considered in detail and displayed in the FEIS are described as follows:

Preferred Alternative (PRF)

The Preferred Alternative in the Draft was modified as a result of public comments and additional analysis to become the Preferred (PRF) Alternative in the FEIS. This alternative will increase the level of environmental protection while maintaining timber and grazing outputs near existing levels. The alternative establishes a high level of protection for wildlife, riparian areas, soil productivity, water quality, and visual quality. The alternative provides for a mix of resource uses in former roadless areas. The highly productive lands are managed for timber, and those lands with high recreation values will be managed for a variety of recreation activities. Expansion of existing ski areas and development of new ski areas is provided for. The Allowable Sale Quantity (ASQ) is 142.3 MMBF through five decades.

Current Management (No Action) Alternative (CUR)

The no action alternative remains unchanged from the Draft EIS. This alternative continues the Forest's current direction, policies, and practices as of **1982**. Timber, grazing, and other goods and services are provided at existing levels. A mix of recreation opportunities is also provided. No specific resource issue or opportunity is emphasized over another. Standards implemented for the CUR Alternative provide for basic protection of soil productivity and water quality. All issues are addressed to the extent allowed by current direction and budget. All roadless areas are available for uses other than wilderness. Expansion of existing ski areas is provided. New ski area development is evaluated on a site-specific basis. The **ASQ** is **173.4** MMBF, increases to **193.7** MMBF by the second decade, and remains constant through the fifth decade.

1980 RPA Alternative (RPA)

This alternative is unchanged from the Draft. This alternative achieves the **1980** RPA program targets assigned to the Forest, by providing moderately high levels of timber and livestock production with an increase in campground facilities. All unroaded areas are available for timber management activities on productive timber lands. Expansion of existing ski areas is provided. New ski area development is evaluated on a site-specific basis. Standards implemented for the RPA Alternative provide for basic protection of soil productivity and water quality. The **ASQ** is **173.0** MMBF, increases to **186.0** MMBF in the second decade, to **198.4** MMBF in the third decade, then remains constant through the fifth decade.

Commodity Alternative (CMD)

Alternative **I** as described in the Draft is modified and emphasizes timber production, livestock grazing, and recreational camping. All unroaded areas are entered within the first decade. Standards implemented for this alternative provide for basic protection of such resources as riparian and streamside zones, viable wildlife populations, water quality, soil productivity, and visual quality. Expansion of existing ski areas is provided. New ski area development is evaluated on a site-specific basis. The **ASQ** is **180.1** MMBF in the first decade, then increases to **184.8** MMBF, **189.6** MMBF, **194.5** MMBF, and **196.9** MMBF in succeeding decades.

Nonmarket Alternative (NMK)

This alternative emphasizes protection of the natural environment and recommends that all inventoried roadless areas plus the Lafayette Ridge area remain without roads. Recreational opportunities that protect amenity values are emphasized. These activities include hiking, cross-country skiing, and nature study. Expansion of ski areas is limited to existing developments; no new areas are developed for downhill skiing. Grazing and timber production are immediately reduced from current levels. This alternative provides for a higher level of protection over current levels for wildlife, riparian areas, soil productivity, water quality, and visual quality. The **ASQ** is **104.9** MMBF through five decades.

Uneven-aged Alternative (UNE)

This alternative provides for the same land allocations, the same direction for environmental protection, and the same grazing and recreation outputs as the Preferred Alternative. The major difference is that this alternative utilizes uneven-aged timber management to produce 50 percent of the timber volume. The **ASQ** is **110.8** MMBF, increases to **114.5** MMBF in the second and third decades, then drops to **114.4** MMBF in the fourth and fifth decades.

The following table describes Alternatives PRF through UNE in an easy-to-compare format. It shows the anticipated average annual output, cost, and benefit levels for the first ten years of implementation. (The fifth ten-year time period is also displayed for some activities.) Following are some of the terms used in the table:

M Ac-Ft: Thousands of acre-feet The amount of water that would cover one acre to a depth of one foot (43,560 cubic feet, or 325,850 gallons).

MMBF: Millions of board feet One boardfoot is the amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide.

M AUM: Thousands of animal unit months. An AUM is the amount of forage required to sustain one mature cow or equivalent for one month.

MM \$ Millions of 1982 dollars.

M RVD: Thousands of recreation visitor days. One visitor day equals 12 hours of recreation use in any combination of persons and hours, such as 1 person for 12 hours, 3 persons for 4 hours, etc.

M WFUD Thousands of wildlife and fish user days One user day equals 12 hours of recreation use oriented to wildlife and fish.

Cord A stack of wood measuring 4 feet high, 4 feet deep, and 8 feet long (128 cubic feet). In wood volume, 2 cords roughly equal 1,000 board feet.

VQI: Visual Quality Index. A numerical rating of scenic quality that reflects both the inherent scenic value of, and the amount of human modification to, the Forest landscape. The VQI would be 60.0 if none of the TNF had been altered, and would be 20.5 if all the Forest had been drastically disturbed.

SOHA Spotted Owl Habitat Area. An area established to provide a minimum of 1,000 acres of suitable habitat at all times for the nesting, roosting, and feeding requirements of a spotted owl pair.

TABLE 1 - COMPARATIVE DESCRIPTION OF ALTERNATIVES (AVERAGE ANNUAL VALUES)

RESOURCE ELEMENT	Units of Measure	Base Year 1982	Decade	1980 RPA Goals	PRF	CUR	RPA	CMD	NMK	UNE
Developed Public Recreation	M RVD	1,388	15	1,850 2,800	1,976 3,318	1,976 2,185	1,976 2,913	1,976 3,318	1,976 3,318	1,976 3,318
Developed Ski Recreation	M RVD	210	15	-- --	292 830	292 830	292 639	292 830	292 734	292 830
Dispersed Recreation	M RVD	2,306	15	2,550 3,250	2,925 4,960	2,925 4,960	2,925 4,960	2,925 4,980	2,925 4,960	2,925 4,980
Off-Highway Vehicle Use Closed	MILES	819	1	--	88	82	133	85	483	88
Usable Open	MILES	747	1	--	685	1,486	688	850	552	685
Designated Routes Only Summer, Open over-the-snow	MILES	--	1	--	1,193	808	1,111	1,144	971	1,193
Designated Routes Only	MILES	1,344	1	--	294	9	338	302	172	294
Designated Routes Only Summer, Closed over-the-snow	MILES	--	1	--	17	20	17	17	16	17
Closed Summer, Open Over Snow	MILES	--	1	--	43	46	43	168	42	43
Designated Routes Only, Closed 11/16 to 4/30	MILES	--	1	--	194	57	194	0	186	194
Unuseable OHV	MILES	--	1	--	789	787	792	806	760	789
Wilderness	ACRES	0		--	18,705	18,705	18,705	18,705	18,705	18,705
Recreation Opportunity Primitive	ACRES	0	1	--	0	0	0	0	0	0
Semi-Primitive Nonmotorized	ACRES	89,773	1	--	92,888	134,162	109,456	132,985	153,697	92,888
Semi-Primitive Motorized	ACRES	115,198	1	--	134,420	103,663	76,572	101,526	38,828	84,420
Roaded Natural	ACRES	545,777	1	--	563,313	562,939	566,571	564,056	561,759	563,313
Rural	ACRES	43,626	1	--	53,753	43,630	41,775	45,807	40,090	53,753
Visual Quality Index	INDEX	52.0	15	51.5 51.5	50.5 46.6	49.9 41.8	49.1 42.4	49.0 39.9	51.0 49.3	51.0 47.8
Special Interest Areas	ACRES	--		1	886	346	346	886	36,333	886
Research Natural Areas	ACRES	--		1	2,386	1,061	1,061	1,686	2,944	2,386
Wildlife and Fish	MWFUD	196	15	-- --	221 223	231 383	237 389	222 224	221 219	220 221
Spotted Owls	SOHA's	--	1	--	33	34	34	33	40	33
Wildlife Habitat Improve.	TOT AC	--	1	--	1,000	1,000	1,000	200	2,000	900
Fish Habitat Improvement	TOT AC	--		1	20	20	20	10	80	20
Range- Grazing Use	MAUM	200	15	180 300	208 230	224 200	342 304	208 270	90 10	208 230

TABLE 1 - COMPARATIVE DESCRIPTION OF ALTERNATIVES (Continued)

RESOURCE ELEMENT	Units Of Measure	Base Year 1982	Decade	1980 RFA Goals	PRF	CUR	RPA	CMD	NMK	UNE
Timber Suitable Land	ACRES	609,296	1	—	528,474	604,835	580,764	591,944	450,327	528,536
Timber Harvest Practices										
Special Cutting	ACRES	—	1	—	159,001	146,281	121,734	132,809	177,327	208,775
Long Rotation Even-Age	ACRES	—	1	—	126,944	121,211	80,806	150,377	121,623	96,863
Short Rotation Even-Age	ACRES	—	1	—	233,201	337,231	378,224	269,254	151,371	127,192
Selection/Uneven-Age	ACRES	—	1	—	—	—	0	39,704	0	95,706
Fuelwood (Non-Sawtimber)	CORDS	28,000	1	—	28,200	38,630	38,550	35,775	14,798	16,143
Allowable Sale Quantity	MMBF	194.2	1	194.2	1423	1734	1730	180.1	1049	—
			5		1423	1937	1984	1969	1049	11.44
Timber Reforestation	ACRES	1,450	1	4,134	3,865	5,070	6,980	5,953	4,930	3,343
			5	4,823	4,837	4,040	3,250	4,760	2,056	3,394
Timber Stand Improvement	ACRES	2,596	1	3,564	12,516	4,900	7,740	12,571	12,516	12,516
			5	3,634	7,677	8,490	6,670	8,856	9,195	8,278
Water Quality at Standard	MAC-FT	1,960	1	1,980	2,080	2,050	2,080	2,050	2,070	2,070
			5	2,010	2,090	2,070	2,070	2,070	2,090	2,100
Water Increase Over 1982	MAC-FT	—	5	—	130	137	134	136	113	120
Watershed Improvement	ACRES	120	1	270	100	25	100	25	100	100
			5	310	0	0	0	0	0	0
Land Acquisition (Excluding Exchange)	ACRES	2,300	1	3,000	500	248	250	800	2,000	500
			5	0	500	200	250	800	2,000	500
Mineral Leases/Permits	PLANS	150	1	173	200	240	240	300	150	150
Mineral Withdrawal Proposed (High Potential)	TOTAL ACRES	—	1	—	5,018	0	5,698	127	14,066	5,698
Fuel Treatment	ACRES	8,000	1	2,800	3,200	6,400	10,900	5,800	2,100	2,000
			5	2,600	3,500	7,500	7,200	4,300	1,500	1,400
Wildfire - Expected Acres Burned	ACRES	1,038	1	—	739	1,817	736	736	713	715
			5	—	1,790	3,105	1,986	2,058	1,708	1,901
Trail Construction and Reconstruction	MILES	230	1	140	72	165	207	72	72	7.2
			5	130	0.8	3.5	5.0	0.8	0.6	0.8
Road Construction and Reconstruction	MILES	991	1	—	53	76	74	74	63	73
			5	—	3.5	4.8	4.7	4.7	4.0	4.6
Total Forest Budget	MM\$	187	1	197	212	201	243	244	222	213
			5	221	384	291	305	404	324	351
Returns to U.S. Treasury	MM\$	69	1	—	277	37.8	37.1	38.9	23.9	25.3
			5	—	59.8	73.5	83.9	85.1	52.1	54.7
Payment to Counties	MM\$	23	1	—	69	9.5	9.3	9.7	6.0	5.3
Present Net Value	MM\$	—	1	—	2,438	2,584	2,671	2,733	2,324	2,346
Local Income	MM\$	504	1	—	72.3	78.7	79.8	80.4	€47	66.1
Employment Created (Includes Forest Employees)	JOBS	5,799	1	—	5,675	6,057	6,205	6,363	5,195	5,239

CHAPTER 3 THE AFFECTED ENVIRONMENT

This chapter describes the physical setting to be affected by the alternatives. It includes the current management situation. The general Forest description is followed by discussions of the economic, social, and resource environments.

GENERAL FOREST DESCRIPTION

The Tahoe is located in the north central Sierra Nevada. Portions of Nevada, Placer, Plumas, Sierra, and Yuba counties are within the Forest boundaries. The Tahoe is bounded on the north by the Plumas National Forest, on the east by the Toiyabe National Forest and Lake Tahoe Basin Management Unit (LTBMU), and on the south by the Eldorado National Forest. Interstate Highway 80 crosses the central part of the Tahoe and provides primary access across the Sierra Nevada between Sacramento, California and Reno, Nevada.

The Tahoe encompasses 1,175,535 acres, with 381,161 acres in other ownerships in an alternate section (checkerboard) pattern. Within the past 50 years the Tahoe has been enlarged by some 32 percent (253,425 acres) with lands acquired through purchase, donation, or exchange.

Within the Tahoe are 28,833 acres which form part of the Lake Tahoe watershed. Although legally part of the Tahoe, these acres are managed by the Lake Tahoe Basin Management Unit. The LTBMU was formed in 1973 by Presidential proclamation to provide unified, more efficient management of the National Forest System lands in the Lake Tahoe watershed.

The western slope of the Tahoe contains numerous historic mining **sites**, some dating back to the 1860's, which created an early heavy demand for timber. Due to this early demand, much of the Tahoe today is characterized by young growth stands of timber 80 to 90 years old, which supply local mills in Nevada, Butte, Sierra, Plumas, Yuba, and Placer counties in California and Douglas County, Nevada.

Today, an estimated eight million residents live within a four-hour drive of the Tahoe. This large, urban population increases the demand for all types of recreational activities, utility rights-of-way, and fuelwood. Major attractions include the Placer County Grove of Sierra Redwoods, the North Fork American Wild River, Granite Chief Wilderness, numerous ski areas and reservoirs, Donner Camp, and the historic Overland Emigrant Trail from Verdi to the Sacramento Valley.

CURRENT MANAGEMENT SITUATION

The following discusses the current management situation. The TNF is managed on an integrated basis, which means that management decisions that affect all resources are designed to achieve multiple resource objectives. Management activities affect a variety of resources, and decisions are made only after considering the entire set of ramifications involved. Similarly, single management activities are actually designed to **serve** a variety of resource objectives. For example, treating lodgepole pine stands with small clearcuts to increase water yield will also provide additional wildlife habitat and a wood source for various purposes. Water developments are designed to **serve** the needs of certain wildlife species as well as domestic livestock. Roads are located to efficiently transport logs from a timber sale area to the mill, but these same roads are also designed to provide access for hunting, fuelwood gathering, and other recreation activities.

Other relationships are more separated in time. For example, greater diversity of vegetation in different stages of growth leads to a gradual increase in populations of certain animal species, which in turn increases recreation opportunities for viewing, photographing, and hunting these animals. This series of events may take several years to complete, yet it may be entirely the result of a single management activity.

Resources are part of a very complex system with numerous interactions. They are described individually only to emphasize important aspects of the current situation in some type of organized framework. These resources must be conceptually combined to understand the overall Forest situation.

SOCIOECONOMIC

An overview was prepared of the existing social and economic conditions which exist in the TNF's zone of influence. The counties of Nevada, Placer, Plumas, Sierra, and Yuba are directly and indirectly affected by Forest activities. Local counties are economically affected in three ways: direct payments to county governments, employment, and income. Payments to counties significantly contribute to all counties' revenues. Sierra County is the most dependent on revenue from the TNF; Yuba County is the least dependent.

Employment and income in the affected counties are influenced by Forest activities, primarily in the wood products manufacturing and recreation-dependent businesses.

AIR QUALITY

Air quality on the Forest is high. Smoke pollution from forest and range prescribed fire has not been identified as a problem. All areas within the Forest are Clean Air Act Class 1, including the Granite Chief Wilderness.

ADJACENT LANDS

The administrative boundary encompasses 1,175,535 acres. Of this total, 381,161 acres are in other ownerships in an alternate section (checkerboard) pattern, with parcels that vary from less than 1 acre to over 12,000 acres. This intermingled ownership pattern results from various public land and mining laws. Additional private land adjoins the TNF's exterior boundary and lies along interior exclusions (e.g., areas of private land excluded when the Forest was established). More than 2,700 miles of property boundary interface between the National Forest and private land.

Most of the private land is owned by small landowners or large industrial owners. Approximately 165,000 acres (44 percent) of the intermingled private land is zoned for timber production by the counties. The large industrial owners are interested in high-yield timber production.

Many small communities were established on public lands during the last century. The residents of most of these communities have received title to the land either through land exchanges or townsite laws.

Scattered throughout the Forest are smaller, privately-owned parcels and tracts, typically 5 to 100 acres in size. These parcels mostly result from homesteads, mineral patents, and State school land sales.

DIVERSITY

The Forest is composed of two broad, yet distinct, vegetative and geomorphic management zones: the eastern and western slopes. Together, they provide a broad array of plant and animal communities.

On the TNF the diversity issue is most strongly associated with: 1) maintenance of diverse forest seral stages over time (particularly older forests), and 2) important habitat elements such as snags, down logs, hardwoods, riparian areas, meadows and meadow edges, and wetlands. Alternate sections of land are privately owned over most of the TNF. The resulting 'checkerboard' ownership pattern seriously complicates analyses of forest diversity.

FACILITIES

TNF facilities include roads, trails, dams, and administrative sites, including utility systems and buildings. Construction and operation of facilities consider energy requirements, resource development and protection, public demand for Forest uses, and transportation needs of private landowners. Direction for construction and operation of facilities comes from Public Laws, multiple-use and land-use plans, the transportation management program, and cooperative agreements with private landowners and other government agencies.

The existing road system under Forest jurisdiction is about 2,400 miles. An additional 850 miles within the Forest boundary are under the jurisdiction of counties, the State, or private owners. Nearly 90 percent of the TNF is accessed by roads.

The existing trail system comprises 508 miles. Use by trail bikes and other off-highway vehicles is prohibited on parts of the trail system, but provided for on other parts of the trail system. About 97 miles of the Pacific Crest National Scenic Trail transects the TNF along the Sierra Nevada Crest. The Western State Trail and Tevis Cup Loop are used for a number of competitive events throughout the summer, and significant public interest has been expressed in nominating the trails for inclusion in the National Trail System. Both trails qualify for National Recreation Trail designation.

FIRE PROTECTION

The Forest has wildfire protection responsibility for about 1,237,700 acres, one third of which are privately owned. The Forest protects these private lands under a cooperative agreement with the State of California.

Fire protection has been **very** effective since 1960, when large fires burned about 100,000 acres of the Forest. Since then, about 27,000 total acres have burned. During this period, the TNF had about 148 fires per year, distributed almost equally between human-caused and lightning-caused. This history of numerous small fires with an occasional large, damaging fire is typical of central Sierra Forests. The years 1987 and 1988 have been unusual in that 1987 set records for wildfire in California where over 600,000 acres burned, and was called the 'Siege of 87'. In 1988 the 33,500-acre 49er fire in Nevada County burned on State Responsibility lands and resulted in the **loss** of 190 homes. This fire had the potential for greater **loss** if the normal westerly winds had occurred.

FUELS MANAGEMENT

Fuels management primarily treats fuels (slash) created by management activities, especially timber harvesting. An estimated 19,000 acres of older fuels are scattered throughout the Forest: these fuels are being reduced through projects such as timber sales, reforestation site preparation, and wildlife habitat improvement. About 8,000 acres of newly created fuels are treated annually on the Forest, including about 1,200 acres by prescribed broadcast burning.

FISH AND WILDLIFE

The fish and wildlife resources on the Forest are quite varied. The TNF contains approximately 366 wildlife species, including 258 bird species, 82 mammal species, 17 reptile species, 9 amphibian species, and 21 species of fish.

Federally classified threatened and endangered species on the TNF include bald eagle, peregrine falcon, and Lahontan cutthroat trout. Sensitive species include pine marten, fisher, willow flycatcher, spotted owl, great gray owl, and goshawk. Pacific Southwest Regional policy states that sensitive animal species will be treated as though they were Federally classified as threatened or endangered; this means that all necessary steps will be taken to ensure that agency actions do not jeopardize the continued existence of these species.

Fishing is a major recreational activity on the Forest. Over 1,500 miles of fishable streams exist, and 22 impoundments hold about 20,000 surface acres of water. The existing fishery is primarily cold water fishing for rainbow, brown, and brook trout. Some lakes have kokanee salmon, lake trout, and mountain whitefish. Most waters are stocked annually. One reservoir, Bullards Bar, has a warm water fishery. California has designated portions of the North Fork American River and Lavezzola Creek as wild trout streams.

FOREST PESTS

An integrated pest management (IPM) approach, which recognizes pest management as an integral part of timber and other resource management, is used to prevent and reduce unacceptable pest-related damage on the TNF. Under IPM, a full range of pest management alternatives is considered for each pest situation on a project-level, site-specific basis.

GEOLOGY

The primary geologic hazards on the TNF consist of debris slides and rockfalls. Snow avalanche hazards and small areas containing asbestos-bearing rock also occur. Seismic and volcanic activity are low potential hazards.

Geologic resources, besides locatable and leasable minerals, include groundwater, common variety mineral materials, and geologic special interest areas. Rock and soil materials sources, both public and private, are used for road surfacing, roadway fill, and streamcourse restoration projects. Many small groundwater basins and springs are used for human, livestock, and wildlife consumption. Groundwater use for domestic purposes is becoming more significant on the Forest. Two areas of geologic special interest have been identified.

HISTORICAL AND CULTURAL RESOURCES

About 25 percent of the Forest has been inventoried for archaeological sites. Over 1,500 historic and prehistoric sites have been recorded. The historic sites represent early-day logging, mining, homesteading, and ranching. They range from small camps attributed to the 49'ers to large-scale hydraulically-mined areas. Prehistoric occupation and use of the TNF is evidenced by seasonally occupied base camps, hunting and food gathering areas, petroglyph sites, and a few large year-round village sites.

HUMAN AND COMMUNITY DEVELOPMENT

Human resource programs include the Comprehensive Employment Training Act, Senior Community Service Employment Program, Youth Conservation Corps, Young Adult Conservation Corps, and the Volunteer Program. The Urban and Community Development Program involves both research and technical assistance through the State for the improvement of natural resources on private lands. One such program that the TNF helped develop and actively supports is the Resource Conservation and Development Program for the High Sierra Resource Conservation and Development Area.

HYDROELECTRIC PROJECTS

Hydroelectric development is a legitimate use of public land that is recognized by the Federal Power Act of 1920. The Forest Service objective for hydroelectric projects is to ensure that construction and operation on public land is consistent with the purposes for which the National Forests were established.

LANDS

Adjustment

The land adjustment program attempts to achieve more efficient and effective management of Forest resources by acquiring or exchanging land. Generally, National Forest System lands will be retained. Land adjustments are considered on a case-by-case basis determined by management needs and public values. Approximately 265,341 acres (34 percent of the total TNF System acreage) have been acquired through purchase, donation, or exchange within the past 50 years. The land adjustment program is guided by the TNF Master Land Ownership Adjustment Plan and specific purchase composites in critical recreation areas. These plans will be revised to reflect the direction in the Forest Plan and the California Wilderness Act. Because of the substantial amount of acquired land and intermingled ownerships on the TNF, considerable opportunities exist for survey problems, title claims, and trespass. Primary emphasis has been and will continue to be on prevention.

Special Uses

Approximately 870 permits, easements, and licenses authorize the use of National Forest System land for uses ranging from cabins, resorts, and ski areas to reservoirs, roads, and utilities, encumbering over 22,000 acres. Compatible uses are grouped by designating transportation and utility corridors, such as Interstate 80, and electronic sites. The TNF issues about 70 permits, licenses, and easements annually for authorized uses.

Transportation and Utility Corridors

There are no formally established transportation and utility corridors, although the area along Interstate 80 includes many existing facilities. This 'corridor' is up to one mile wide, contains considerable private land, and can support additional uses. An opportunity exists to expand and upgrade existing facilities to meet future demands. Other existing and proposed facilities on the Forest do not require corridor designation because they conform with management direction for the area.

Current direction excludes corridors from the Grante Chief Wilderness, the North Fork American Wild River, Onion Creek Experimental Forest, and potential Research Natural and Special Interest Areas.

LAW ENFORCEMENT

Law enforcement, which includes protection of government property, Forest users, visitors, employees, and Forest resources, is an important management concern because of the potential losses, costs, and damages to public and natural resources.

MINERALS

Four categories of minerals are located in the TNF:

1. Locatables (hardrock minerals - gold, silver, etc.)
2. Leasables (geothermal and locatable minerals on acquired land)
3. Saleables (basically common varieties - sand, gravel, etc.)
4. Outstanding Mineral Rights (land managed by the TNF where the mineral estate is reserved or outstanding)

About 94 percent of the TNF is open to locatable mineral entry under the 1872 Mining Law. Principal leasables on the Forest are geothermal, generally found on the east side of the Sierra, and metallic minerals on those acquired lands without public domain status. The saleables, or common variety form of minerals, is the only category that is 'managed' by the Forest Service.

The western side of the Forest is highly mineralized. This area includes part of the historic Northern Mines gold mining region (Downieville to Placerville). Other important minerals and common variety minerals found in the Forest include chromite, barite, silver, iron, copper, sand, and gravel. Chromite is a strategic mineral with critical significance because current supplies are primarily from foreign sources.

RANGE

The available domestic livestock forage consists of transitory and permanent range. Transitory range is created by wildland fires and by management practices, especially timber harvesting. Transitory range occurs mostly on the lower elevation western slopes, whereas the permanent range consists of high mountain meadows throughout the Sierra Nevada Crest and the eastside pine forest type.

Forty-six active grazing allotments within the TNF encompass 310,448 acres of public land and 192,194 acres of waived and cooperative private land. Cattle graze on 30 allotments, and sheep graze on 15 allotments, with one allotment grazed by both cattle and sheep. These allotments produce a total of 20,000 animal unit months (AUMs) on public land and 10,800 AUMs on private land. Currently, two allotments have no livestock. Eighty-five percent of the rangelands are currently in satisfactory condition with a stable trend. Grazing allotments with improved management systems have an upward trend.

RECREATION

Recreational **use** of the TNF has increased steadily for the past 30 years to **its** present annual level of about **5,000,000** recreation visitor days (**RVD's**) **as of 1986**.

Forest recreational **use** is projected to climb to about **5,200,00RVDs** in **1990**, **6,200,00RVDs** in **2000**, and **9,100,00RVDs** by the year **2030**. These projections assume that recreation **use** will increase at the same rate as the population growth in the neighboring counties and the extended zone of influence

Recreation facilities and **RVD use** consist of the following

- o **197** developed recreation **sites** on **1,843** acres. These sites accounted for **1,885,800 RVDs** in **1982**.
- o Four winter sports resorts operating under Forest special-use permits. They provide about **497,600RVDs** per year (**209,50RVDs** per year on public land and about **288,100RVDs** on private land).
- o **177** facilities under special-use permit (**155** recreation residences in **9** tracts, **5** summer resorts and commercial establishments, and **17** organizations and clubs).
- o Cross-country skiing, along with snowmobiling and other recreational winter sports, accounted for **36,100RVD's** in **1982**
- o Off-highway vehicle **use** of about **177,500RVD's** in **1982**

RESEARCH NATURAL AREAS

Research Natural Areas (**RNA's**) are recommended to the Chief of the Forest Service to preserve examples of all significant natural ecosystems for purposes of research and ecological study and to provide gene pools. Currently, there are no designated RNA's on the Tahoe National Forest

RIPARIAN AREAS

Riparian areas comprise the aquatic ecosystem, the riparian ecosystem, floodplains, wetlands, and streamside management zones. The riparian ecosystem/wetlands areas total about **54,200** acres within the Forest boundary, of which about **32,000** acres are public land. About **47,800** acres of identified streamside management zones lie adjacent to perennial water bodies on public lands. About **38,700** of these acres comprise 6.0 percent of the Forest's total timber producing land. Activities within streamside zones are not excluded but are closely managed. About **4,600** acres of floodplains are associated with large (Class I) streams, mostly on public land. The condition of riparian areas on the Forest is generally quite good. Water quality is generally quite high, indicating that the aquatic ecosystem is in good condition.

SENSITIVE PLANTS

One Federally endangered and **12** sensitive plant species are known or suspected to occur on the Forest or in its vicinity. No plant is listed as threatened. All necessary steps will be taken to ensure that agency actions do not jeopardize the continued existence of these species, and that viable populations of sensitive plants will be maintained.

SOILS

Forest Service direction is to maintain or enhance soil productivity. No management action will be intentionally taken that will irreversibly impair soil productivity. Soil characteristics and qualities that are indicators of soil productivity will be monitored to detect any changes caused by management activities. A third-order soil resource inventory has been completed for the Forest.

The western third of the TNF contains soils developed mainly from metasedimentary and ultrabasic bedrock; soils on the ridgetops have developed primarily from andesitic tuff breccia mudflows of the Meherten Formation. Soils around Bullards Ear Reservoir have developed mainly from granitic bedrock. The western third of the TNF has the most productive soils

Soils in the eastern third of the TNF have developed from rhyolitic and granitic bedrock and from alluvial deposits. Low precipitation is a major limitation to productivity.

Soils at higher elevations along the crest of the Sierra have developed from volcanic, metasedimentary, and granitic rocks, and from glacial-alluvial deposits. Steep slopes and shallow and rocky slopes limit productivity.

SPECIAL INTEREST AREAS

Special Interest Areas (SIAs) are established to protect special or unique geological, ecological, or cultural features. No established SIAs are presently on the TNF. The SIA Environmental Assessment and Establishment Report for the Placer County Big Tree Grove Botanical Area (346 acres) is being prepared. The Forest recognizes the need to search out other unique areas for their establishment and protection through SIA status.

TIMBER

The available wood supply from the TNF depends upon the amount of land capable of producing at least 20 cubic feet of timber per acre per year (estimated at 649,867 acres) and which is not withdrawn from timber production. Timber producing land is classified into five major forest types: mixed conifer, red fir, eastside pine, lodgepole pine, and hardwoods. There are 449,842 acres of intensively managed forest land (land capable of annually producing at least 85 cubic feet of timber per acre) on the Forest.

The current timber management direction was established in the October 16, 1978, TNF Timber Management Plan and Final Environmental Statement. The average annual programmed sale quantity is 147.6 million board feet. Most of this volume is harvested from 306,000 acres identified for intensive forest management in the Timber Management Plan, which emphasizes even-age management and regeneration harvest of understocked timber stands.

VISUAL RESOURCES

The TNF has varied and distinctive landscapes. The California Master Plan for Scenic Highways designates portions of Highways 20 and 49 that are within the boundary of the TNF as scenic highways. Highway 89, Interstate 80, and the remainder of Highways 20 and 49 are eligible for designation as scenic highways.

Public concerns and demands for natural-appearing scenic environments has led to Forest Service standards being established for quantifying the current and probable future condition of the visual resource. The intermingled private lands, however, generally do not have established scenic standards that would retain visual qualities.

WATER

The Forest produces about 3,244,000 acre-feet of water per year within its boundaries. About 2,000,000 acre-feet of this total are produced from National Forest System land. No active Forest Service effort exists to increase water production on the TNF.

About 98 percent of the runoff originating within the Forest boundary meets State and Federal water quality objectives. The remaining runoff fails to meet objectives for sediment and turbidity. Major sediment sources are abandoned hydraulic mine sites, roads, and old wildfire areas.

WILD AND SCENIC RIVERS

In November 1978, Congress designated the North Fork American River as a Wild River from a point 0.3 mile above Heath Springs downstream to a point approximately 1,000 feet upstream of the Colfax-Lowa Hill Bridge. The Wild River area totals 38.3 miles and includes the Gold Run Addition Area. The area is managed according to the North Fork American Wild River Management and Development Plan, approved October 3, 1979. The Forest Service (5,788 acres) and Bureau of Land Management currently share the responsibility for administering the North Fork American Wild River. The State of California retains management responsibility for its land (123 acres) within the designated Wild River boundary. Management of this land is coordinated through a Memorandum of Agreement.

The Heritage Conservation and Recreation Service (HCRS) (now a part of the National Park Service) Nationwide Rivers Inventory of 1981 included portions of the Middle Yuba River and South Yuba River. A USFS assessment of the eligibility of these rivers concluded that the inventoried portions of the Middle Yuba River and South Yuba River are 'outstandingly remarkable' and are eligible for inclusion in the Wild and Scenic River System.

In addition, based on public response to the Draft EIS and Plan and Forest staff review, the Middle Fork American River, North Fork of the Middle Fork American River, Laveuola Creek, and Canyon Creek were identified and evaluated for outstandingly remarkable values to determine if they were eligible for Wild, Scenic, or Recreational River status. No outstandingly remarkable values were identified for these four rivers, and they are not eligible for inclusion in the Wild and Scenic River System. The Truckee River will be studied for eligibility and suitability in the next three years in coordination with the Lake Tahoe Basin Management Unit. The upper Rubicon River from Hell Hole Reservoir and above will be studied for eligibility in coordination with the Eldorado National Forest. See Appendix E of the FEIS for more information.

WILDERNESS

The California Wilderness Act of 1984 designated about 18,705 acres of National Forest System land of the Granite Chief RARE II Area as wilderness and released the remaining roadless areas for nonwilderness uses in this round of planning.

CHAPTER 4 THE ENVIRONMENTAL CONSEQUENCES

This chapter discusses the environmental consequences (commonly referred to as impacts) of implementing the proposed action and alternatives, and forms the scientific and analytic basis for the comparisons of alternatives described in Chapter 2. The resource output levels by alternative are displayed, and the environmental consequences that result are described. The environmental consequences for all alternatives assume the implementation of Forestwide standards and guidelines. These standards and guidelines provide means to mitigate adverse impacts to ensure that the long-term productivity of the land is not impaired.

The following narrative compares the alternative approaches to resource management and the significant environmental consequences.

ECONOMIC

Output levels are discussed by resource category in the remainder of this section. Because it shows the most variation among alternatives, timber harvest explains most of the differences among alternatives in terms of income and employment. Ranking alternatives by timber harvest, income, or employment results in the same order: CMD is highest and NMK is lowest, the PRF alternative (Preferred) is fourth from the highest.

Income and Employment

All alternatives provide growth in income, employment, payments to counties, and returns to the U.S. Treasury. Alternatives NMK, UNE, and PRF would result in **less** growth, and the remaining alternatives (RPA and CMD) would result in greater growth than current management (CUR alternative).

Other economic effects of interest at the National and local levels are returns to the U.S. Treasury and payments to counties. The same relationship holds here **as** for income and employment. Timber harvest explains the first-decade variation among alternatives. Timber harvest accounts for over **95** percent of returns to the U.S. Treasury and payments to the counties.

Forest Budget

Alternative CMD would require the greatest budget for implementation, nearly **\$24.4** million per year for the first decade. The PRF alternative ranks **fifth**, with a projected budget of **\$21.2** million. Alternative CUR would have the lowest budget of **\$20.1** million. These budgets include appropriated funds and funds for brush disposal, reforestation, and timber stand improvement.

Economic Efficiency

The measure of economic efficiency used in evaluating alternatives is net public benefits. Net public benefits, conceptually, are the sum of the non-priced commodity values and the present net value.

The goal of planning is to develop a plan that obtains the highest net public benefit (36 Code of Federal Regulations **219.1(a)**). (Please refer to FEIS Appendix D for a detailed discussion of the concepts of net public benefits, present net value, and the **use** of economics in this analysis.) The PRF alternative has the highest net public benefits.

Present net value is the difference between the discounted value of all outputs to which monetary values or established prices are assigned and the total discounted costs of managing the planning area. Examples of non-priced benefits include scenic quality, wildlife habitat, and community stability. Values of some non-priced commodities are inferred from observations of indicators such as the number of participants, tolerance of congestion, and expense of participation.

All alternatives have a positive present net value (PNV) that range from **\$2,733** million for Alternative CMD to **\$2,324** million for Alternative NMK. The PRF alternative ranks fourth with a PNV of **\$2,438** million. Recreation (developed and **ski**) and timber are the largest contributors to PNV and potential first-decade income and employment in all alternatives. Short rotation timber management and protection of resources such as soil productivity, water quality, wildlife, and visual quality are the major tradeoffs between PNV and non-priced benefits among the alternatives. Changes in timber harvest levels account for most of the changes in PNV among alternatives.

Benefits associated with hydroelectric and mineral development are currently unquantified, but would be inversely related to the amount of land withdrawn for such noncompatible uses as Research Natural Areas, recreation developments, or cultural areas.

SOCIAL

The social benefits provided by each alternative cannot be measured or compared in terms of one being better, worse, higher or lower than another; however, different social groups are affected differently by each alternative. For example, the long-time resident group would generally benefit most from the CUR, RPA, and CMD alternatives and least from the NMK and UNE alternatives; the PRF alternative is relatively high in opportunities for this group. The alternative lifestyle resident group would benefit most from Alternatives NMK and UNE and least from the CUR, RPA, and CMD alternatives; the PRF alternative is low in opportunities for this group. Native Americans would benefit more from those alternatives with increased commodity production, because a majority are employed in the timber industry; however, these alternatives would also increase the risk of **loss** or damage to Native American cultural resource sites.

AIR QUALITY

The effects on air quality would be similar among alternatives. Short-term impacts of dust from road use and smoke from prescribed fire would occur. Air quality, however, would still meet State Air Resource Board standards. At this time, no significant long-term impacts are identified.

DIVERSITY

The alternatives that provide large amounts of regeneration harvest (PRF, CUR, RPA, and CMD) would yield large increases in grass and forbs or early successional vegetative stages. Alternatives NMK and UNE, with less acres of regeneration harvest, would produce **less** acres of early successional stages.

Alternative NMK would maintain the current inventory of late successional stages or older forests. Alternatives CUR and UNE would retain about 50 percent of the current inventory of late successional vegetative stages at the end of 50 years. Alternatives PRF, RPA, and CMD would retain about **40** percent of the inventory at the end of **50** years.

Overall, most alternatives would improve diversity as timber age classes become balanced. The distribution of diversity elements is guided by the Forestwide standards and guidelines.

FACILITIES

Alternatives CUR and CMD would develop the most access within the Forest during the next 30 years by reconstructing existing and constructing new arterial, collector, and local roads. Alternatives NMK and UNE would develop the least access. Alternatives RPA and PRF would access a moderate amount of area to provide for commodities and the recreational program.

Under all alternatives, miles of road open or closed to use would remain about the same. Seasonally, restricted road miles would vary by alternative. The location of roads open, closed, or seasonally restricted would vary by each alternative emphasis.

FIRE AND FUELS

Net resource losses from wildfire would increase over time under the CUR alternative, in which detection, prevention, and suppression would be limited by constrained fire management programs and budgets. Under all other alternatives, the net wildfire losses would remain relatively unchanged.

Decade by decade, the CUR alternative would have more acres burned annually by wildfire than any other alternative. In all other alternatives, the fire management program emphasis would shift from a mix of large and small engines to all small engines and hand crews, and budgets would increase by 20 percent.

FISH AND WILDLIFE

All alternatives would focus management programs on fish and wildlife indicator species and groups. Each would fulfill Forest Service responsibility to protect and enhance habitat for threatened and endangered species. Alternatives PRF, CUR, RPA, and CMD offer the greatest opportunities to increase populations of deer, bear, blue grouse, mountain quail, gray squirrel, and other associated species needing early successional stages. Alternatives NMK and UNE would provide the largest populations of spotted owls, pileated woodpeckers, and other species associated with mature forest habitats. Fish habitat is not expected to vary significantly among alternatives. Fish numbers would vary in relation to stocking and harvest levels.

FOREST PESTS

Because of the differing intensities of integrated pest management implemented under the different alternatives, Alternatives CUR, RPA, and CMD should have the lowest level of pest-related damage. Moderate damage levels would likely occur under the PRF alternative, and the greatest potential damage would most likely occur under the NMK and UNE alternatives, which provide the fewest opportunities to manage vegetation and implement pest-prevention practices.

GEOLOGY

Risk for geologic instability was estimated by the amount of timber harvested on slopes greater than 30 percent, and by the amount of protection given the unstable inner gorges within the streamside zone. Using these criteria, Alternatives NMK, PRF, and UNE would provide the lowest geologic instability risk. Alternative RPA would cause the **most** instability risk. Alternatives CUR and CMD would have a moderate risk. When the standards and guidelines are implemented, the risk is minimal for all alternatives.

HISTORICAL AND CULTURAL RESOURCES

All alternatives would meet minimum legal requirements. Interpretation and enhancement of cultural resources are emphasized in Alternatives PRF, NMK, and UNE. All alternatives require additional non-project related inventories to meet the RPA goal of a complete Forest inventory by the year 1995.

While cultural resources are afforded protection by law, the likelihood of disturbance by management activities by increasing access or by increasing visitor **use** of the Forest would vary among the alternatives. The RPA and CMD alternatives, which emphasize timber management and roading, would create an overall high threat to cultural resources. The PRF alternative would create a moderate threat to cultural resources. While recreation **use** would increase under the NMK and UNE alternatives, because these alternatives do not emphasize timber management activities, the overall threat to cultural resources would be low.

HYDROELECTRIC PROJECTS

Future hydroelectric projects would be prohibited in the Granite Chief Wilderness, the North Fork American Wild River, and Special Interest and Research Natural Areas. On all other lands, the Forest Service would respond to proposals on a project-by-project basis.

LANDS

Adjustment

The acreage in the land adjustment program would not vary much by alternative. The emphasis of the land adjustment program would be dictated generally by the objectives of the alternative.

Property boundaries need to be established because of the timber sale program. About two-thirds of the land line location would follow the scheduled timber outputs for the first two decades. Therefore, alternatives stressing timber production (Alternatives CUR, RPA, and CMD) would have the greatest number of land line miles to post and mark per year in the first decade. All alternatives would complete the land line program by 2020.

Special Uses

Special-use applications would not vary much among alternatives. Alternatives with more proposed semi-primitive nonmotorized recreation areas, Research Natural Areas, and Special Interest Areas would tend to discourage applications in those particular areas, but the overall number of special-use applications would not change significantly.

MINERALS

The NMK alternative proposes the greatest number of acres of high mineral potential for withdrawal from mineral entry and leasing. Overall, the total acres of mineral withdrawal would correspond to the acres recommended for scenic highways, concentrated public **use**, Research Natural Areas, and Special Interest Areas. The Placer County Big Tree Grove Special Interest Area is already withdrawn. Alternatives NMK, RPA, UNE, CMD, PRF, and CUR (in descending order) would have the largest amount recommended for withdrawal. Alternatives with more acres withdrawn would reduce opportunities to explore and develop the mineral resource.

RANGE

The RPA alternative has the greatest AUM production, while the CMD alternative would provide slightly fewer AUMs. The PRF and UNE alternatives would provide for a small increase over the existing level of 20,000 AUM's. The NMK alternative would immediately reduce the current level of grazing to 9,000 AUM's and continue to reduce grazing until it levels out at 1,000 AUMs by the fifth decade.

About 95 percent of the suitable range would be in satisfactory ecological condition by the year 2030 in Alternatives PRF, RPA, CMD, and UNE. The trend of those acres in satisfactory condition would be upward. Alternative CUR would have 85 percent of the suitable range in satisfactory ecological condition by the year 2030 with no change in trend. Since only 1,000 AUMs remain in the NMK alternative by the year 2030, the vegetation would develop mostly through natural succession. The ecological range condition cannot be evaluated for Alternative NMK.

RECREATION

Developed Recreation

All alternatives would meet projected demand (measured by RVDs) for developed recreation through the first decade. Alternatives PRF, CMD, NMK, and UNE would meet demand over the entire planning period through expansion of existing sites and construction of new ones. The RPA alternative would meet demand for three decades. The CUR alternative would meet demand only for the first decade and would not construct any new developed recreation facilities, by the fifth decade, only 65 percent of developed recreation demand would be met.

Ski Areas

Alternatives PRF, UNE, and CUR would both expand existing and develop new downhill ski areas to meet projected demand over 5 decades. These alternatives would provide the most opportunity for downhill ski recreation. Alternatives RPA and CMD would meet demand through the fourth decade and meet 77 and 88 percent of demand, respectively, in the fifth decade. Alternative NMK would *not* develop new ski areas, and only 31 percent of ski demand would be met in the fifth decade.

Dispersed Recreation

All alternatives would meet overall dispersed recreation demand because of the Forest's large capacity for dispersed recreation activities. Opportunities for some types of dispersed recreation may be limited in some alternatives, however, in all alternatives, except NMK, semi-primitive nonmotorized recreation opportunities would diminish because road access would increase throughout much of the Forest and because vegetation management activities would expand into areas currently natural-appearing,

Similarly, in all alternatives, opportunities for motorized recreation that require primitive roads and near-natural settings would be reduced from the current situation. In all alternatives, opportunities would increase for activities that benefit from improved road access (such as hunting, fishing, driving for pleasure, and auto camping) and that are not affected by the appearance of human-caused landscape modifications.

RESEARCH NATURAL AREAS

Candidate areas for RNA designation are listed by alternative.

	PRF	CUR	RPA	CMD	NMK	UNE
Babbitt Peak (1,061 acres)	X	X	X	X	X	X
Sugar Pine Point (625 acres)	X			X	X	X
Basin Peak (60 acres)					X	
Lyon Peak/Needle Lake (700 acres)	X				X	X
Mt Lola (498 acres)					X	

The PRF, NMK, and UNE alternatives would provide representation of the Washoe pine, mountain hemlock, and mixed conifer types in the RNA system. Alternative CMD includes Washoe pine and muted conifer, while the CUR and RPA alternatives would provide representation of the Washoe pine

RIPARIAN AREAS

Alternative RPA would result in the greatest potential to damage streamside management zones (SMZ's) and the aquatic ecosystem: potential impacts are very high compared to 1982 levels. Alternative CMD would result in high to very high potential impacts compared to 1982 levels. Alternative CUR would result in high potential impacts compared to 1982 levels. Alternative UNE would result in low potential to damage SMZ's and the aquatic ecosystem: this alternative slightly changes 1982 conditions. Alternatives PRF and NMK would result in moderate potential to damage SMZ's and the aquatic ecosystem: their potential impacts are somewhat greater than 1982 conditions.

SENSITIVE PLANTS

To maintain the present populations of sensitive plant species, the TNF developed sensitive plant program standards and guidelines. They ensure that sensitive plant species are considered in all Forest projects. Sites not identified (obscured by heavy vegetation, poor flowering year, etc.) during project inventory, however, could be adversely affected.

Ground-disturbing activities, such as road building and timber harvesting, provide a good measure to judge the effects of various alternatives. The risk to sensitive plants and their habitats was determined by the number of acres proposed for ground-disturbing activities. High risk represents an increased chance of disturbance, and low risk represents a decreased chance of disturbance.

Alternatives PRF, CUR, RPA, CMD, and UNE would have the greatest potential to disturb or destroy sensitive plant species and their habitats. Alternative NMK would have the lowest risk of disturbance.

SPECIAL INTEREST AREAS

Placer County Big Tree Grove Botanical Area (346 acres) is proposed as a Special Interest Area (SIA) under all alternatives. Alternative NMK (17 areas, 36,333 acres) would provide the greatest number of SIA's and therefore would provide the most protection of special values and the most opportunities for public appreciation. Alternatives PRF, CMD, and UNE (7 areas, 886 acres) would provide moderate protection of special values and moderate opportunities for public appreciation. Alternatives CUR and RPA (1 area, 346 acres) provide only the Placer County Big Tree Grove Botanical Area and would provide the least protection of special values and only limited opportunities for public appreciation.

SOILS

Alternatives RPA, CMD, and CUR would result in the greatest potential to reduce soil productivity because of the greater emphasis on regeneration harvest and, to a lesser extent, the level of livestock grazing. Alternative NMK would have the lowest potential to reduce soil productivity, followed by UNE and PRF, basically due to the size of the timber program, associated road construction, and the amount of logging on steep ground. All alternatives would maintain soil productivity and would be within watershed thresholds. The risk of not maintaining soil productivity and water quality would increase when the timber program increases.

TIMBER

Alternatives CUR, RPA, and CMD are similar in overall environmental consequences. These three alternatives would have the largest suitable landbases, the largest percent of intensively managed forest land in the timber landbase, and the highest productivity index. In other words, these alternatives combine large, high quality timber landbases with high intensity management. Timber would be generally emphasized on capable, prime lands.

Alternatives NMK and UNE would be at the opposite end of the range of landbase and management intensity. Alternative NMK would have the smallest timber suitable landbase and the lowest productivity level and essentially would operate on the existing roaded landbase. Alternative UNE would have the lowest amount of land allocated to short rotation even-age management, but a total timber suitable landbase similar to the PRF alternative. Alternative NMK would have the lowest productivity index, with UNE the second lowest.

The PRF alternative lies between the CUR/RPA/CMD alternative group and the NMK/UNE alternative group in terms of suitable landbase, amount of land in the highest yield category, and overall timber productivity.

Alternatives that have the highest allowable sale quantity also have the highest potential wood energy available. This potential wood energy would also be available for lumber, wood chips, fuelwood, and other uses.

VISUAL RESOURCES

The NMK alternative would provide the highest visual quality of all the alternatives, with the UNE alternative providing similar emphasis. The NMK alternative maintains the most areas of any alternative as natural appearing while the UNE alternative, with its uneven-age approach to timber management, provides almost the same level of protection to existing visual quality. The PRF alternative would significantly improve visual quality compared to the CUR alternative because visually important middleground areas, including the middlegrounds as viewed from State scenic highways and major scenic vistas, would remain mostly natural appearing. The CUR, RPA, and CMD alternatives would protect the visual quality in the foreground along the State scenic highways, while most middleground views would be dominated by obvious landscape alterations.

WATER

Although all alternatives are expected to be within watershed thresholds, none of them are free of the potential for effects. Alternative RPA would result in the highest potential to incur cumulative watershed effects with long-term equivalent road acre (ERA) values 60 percent greater than current levels. Alternative NMK would result in the lowest potential to incur cumulative watershed effects with ERA values 14 percent greater than current levels. Overall, Alternatives RPA, CMD, and CUR would result in moderate potential for cumulative watershed effects in small watersheds. Alternatives NMK, UNE, and PRF would result in low potential for cumulative watershed effects in small watersheds. Another important factor in determining effects is the amount of private land in the watershed and the activities on that private land. The determination of cumulative watershed effects at the project level will consider activities on both public and private lands.

Alternatives RPA and NMK would restore about 2,500 acres of watershed (the maximum treatable acreage) over the next fifty years. Alternatives PRF and UNE would treat about 1,900 acres, while Alternatives CUR

and CMD would treat about 500 acres. Alternatives RPA and NMK would result in the largest acreage of soil and water improvement and would provide the greatest emphasis in improving water quality and degraded riparian areas. Alternatives CUR and CMD would result in the fewest acres of planned treatment due to historic management emphasis on other resources, such as timber and recreation, this would result in the lowest improvement in water quality and currently degraded riparian areas. Alternatives PRF and UNE would treat the highest priority areas that are contributing to degradation of riparian areas and water quality; a large improvement in water quality and currently degraded riparian areas would occur.

Turbidity and sedimentation would occur under all alternatives, but would be slightly lower than the current level in Alternatives PRF, NMK, and UNE, and slightly higher in Alternatives CUR, RPA, and CMD. The turbidity and sediment levels produced would be local, short-term, and would not harm beneficial uses.

WILDERNESS

The Granite Chief Wilderness (18,705 acres) would be managed for its wilderness values under all alternatives.

WILD AND SCENIC RIVERS

The North Fork American River, as designated by Congress, will be managed as a wild river. The Plan does conclude that the Middle Yuba River and South Yuba River are outstandingly remarkable and eligible for inclusion in the Wild and Scenic River system, and provides for study of the Truckee River and upper Rubicon River. Under all alternatives no activities would occur within the wild river corridor unless the activities are consistent with the North Fork American River Wild River Management Plan. Outside the wild river corridor the PRF and UNE alternatives could slightly affect the recreation experience. The CUR alternative would have some effects and recreation experience would reduce moderately. The RPA alternative could moderately reduce the recreation experience. The CMD alternative has the greatest likelihood of creating vegetation changes that would be visible from the wild river and recreation experience levels would be reduced the most. The NMK alternative provides the greatest emphasis on dispersed recreation while maintaining a near-natural forest environment. Therefore, this alternative would provide the highest quality recreation experience levels for the wild river.

CHAPTER 5 LIST OF PREPARERS

The Interdisciplinary Team of Forest Service specialists coordinated and conducted the planning activities for development of the Forest Plan. They integrated all resource disciplines according to multiple-use principles. These people were selected because of their expertise and ability to respond to the major issues being analyzed during the planning process. This team used other specialists inside and outside the Forest Service to assist as needed.

The Forest Management Team guided, reviewed, modified as appropriate, and recommended for approval the work of the Interdisciplinary Team.

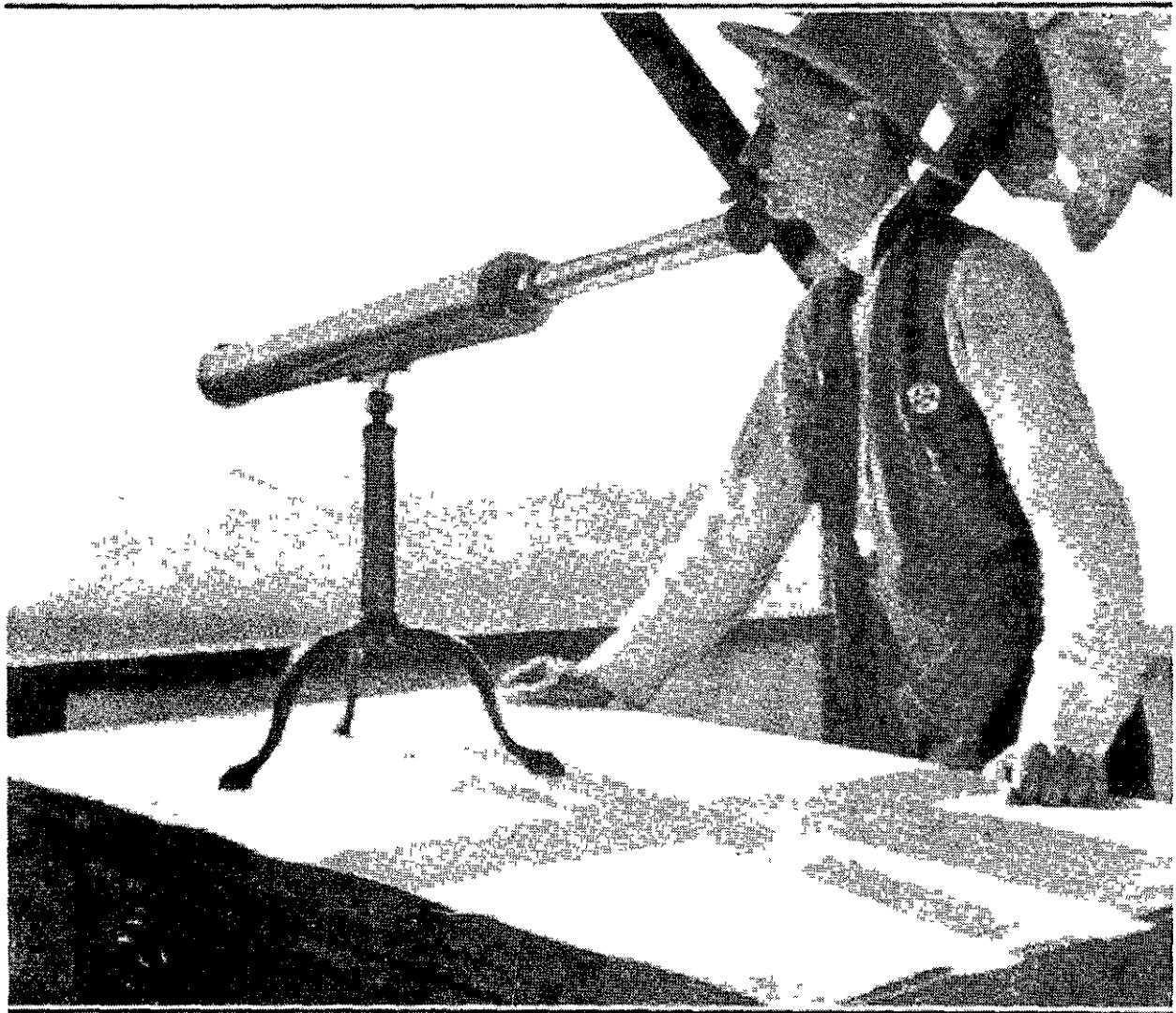
CHAPTER 6 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT WERE SENT

The FEIS and Forest Plan have been sent, or copies made available, to the various agencies and individuals who commented on the Draft EIS and Draft Plan. For additional information, contact the Supervisor's Office, Tahoe National Forest, Highway 49 and Coyote Street, Nevada City, California 95959, or call (916) 265-4531.

AMENDMENTS AND REVISIONS

The Plan will be revised at least every 15 years under requirements of the National Forest Management Act. The Plan may be revised sooner whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly, or when changes in national policies, goals, or objectives **would** have a significant effect on programs of the TNF.

The Regional Forester will approve any significant amendments to this Plan. The determination of significance or nonsignificance will be documented in a decision notice. Determination of significance or nonsignificance are appealable under 36 CFR 217.



Forest Supervisor Richard L. P. Bigelow at Banner Mountain Lookout, 1912

CHAPTER 1

PURPOSE AND NEED

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CHAPTER 1 PURPOSE AND NEED

A. INTRODUCTION

Described in Chapter 1 of this Final Environmental Impact Statement (FEIS) are (B) the purpose and nature of the planning action, (C) the planning process, (D) the vicinity of the Tahoe National Forest (TNF), and (E) the scope of the issues addressed. Described in Chapter 2 are the alternative development process, alternatives considered but eliminated from detailed study, and alternatives considered in detail. Described in Chapter 3 is the environment in which the proposed action and alternatives will take place. Displayed in Chapter 4 are the environmental consequences of implementing the proposed action (preferred alternative) and other alternatives. Listed in Chapter 5 are the names, together with their qualifications, of the persons who are primarily responsible for preparing the FEIS and significant background papers. Listed in Chapter 6 are the agencies, organizations, and persons to whom copies of the FEIS are sent.

B. PURPOSE AND NATURE OF THE ACTION

Historical and Legislative Framework.

In 1974 Congress acted upon the need for coordinated and long-range planning of the uses and resources provided by the National Forests. Two pieces of legislation were passed: the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) and the National Forest Management Act of 1976 (NFMA), amending RPA. These require that comprehensive, long-range Forest Plans replace the separate and often uncoordinated resource management plans.

Additional legislation required Forests, before developing a complete Forest Plan, to investigate and make public:

1. Alternative approaches which could be used in developing the Plan
2. The environment to be affected by the Plan
3. Anticipated environmental consequences of the alternatives.

This Environmental Impact Statement addresses these major subjects as required by the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations.

The TNF Plan is the preferred alternative chosen from the alternatives described in this FEIS. Published separately from this FEIS as a companion document, the Forest Plan accomplishes the following:

- o Guides management of the Forest for the next 10 to 15 years.
- o Allocates land to the combination of management activities for which it is most suited.
- o Includes 50-year long-range objectives.
- o Provides for multiple use and sustained yield of goods and services to maximize long-term net public benefits in a cost-efficient and environmentally sound manner (see Appendix D).
- o Responds to major issues, management concerns, and resource opportunities.

The Forest Plan will be revised at **least** every 15 years or whenever conditions or demands significantly change. It will be reviewed every 5 years to determine the need for more frequent revision.

All existing resource plans were examined by the Forest's interdisciplinary planning team during this planning process. The plans identified in Appendix A of the Plan will be incorporated, superseded, or will be developed as indicated.

C. PLANNING PROCESS

Forest Plans form only one part of the Forest Service planning framework. Based on information from the Regions, the National RPA Recommended Program establishes direction and assigns targets to the Regions for producing goods and services. Each Region in turn provides direction and allocates its share of the National production levels to its Forests; each Forest Plan validates the levels or provides a basis for changing the production levels assigned by the Region.

At the local level, activities and projects carry out the direction developed in the Forest Plan. These local projects can use all the data, evaluations, and other information in the Plan and the EIS as a basis for local project environmental analyses. This process of 'tiering to' the broader documents and incorporating the Plan and EIS by reference permits concentration on issues specific to subsequent smaller projects. Similarly, the Forest Plan is tiered to the Pacific Southwest Regional Guide (previously called the Regional Plan), which is tiered to the National RPA Program. (Figure 1.1 shows the planning process.)

The Forest planning process, as specified in the NFMA regulations (36 CFR 219), is an interdisciplinary approach, which, with public participation, fully considers economic, environmental, and social impacts. The process includes the following steps:

1. Identification of issues, concerns, and opportunities (ICO's).
2. Development of planning criteria
3. Data inventory and information collection.
4. Analysis of the management situation (AMS)
5. Formulation of alternatives.
6. Estimating effects of alternatives.
7. Evaluation of alternatives (and identification of a preferred alternative).
8. Selection of the preferred alternative (or 'proposed action').
9. Plan implementation
10. Monitoring and evaluation.

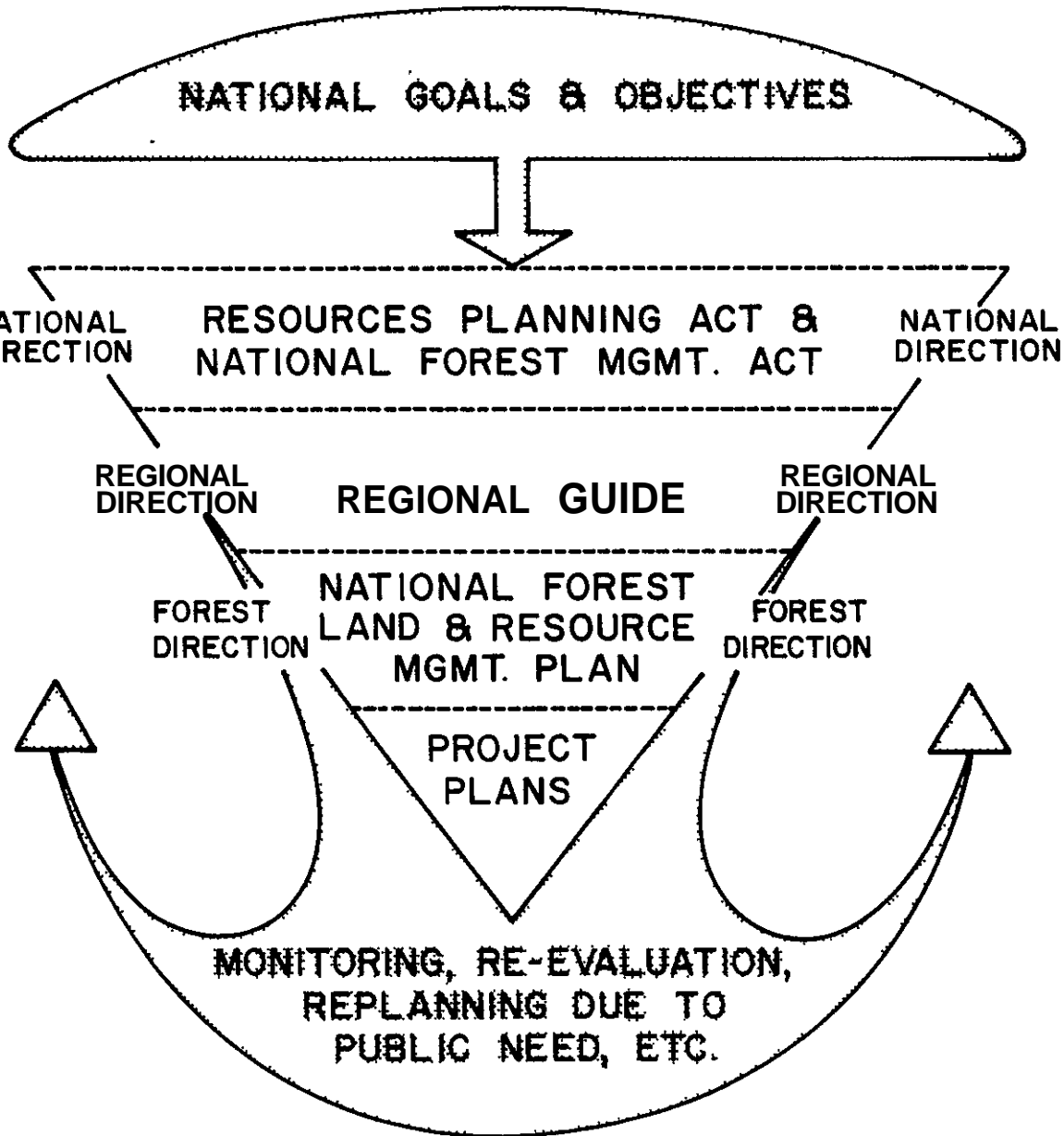
This FEIS presents the results of planning actions 1 through 7 and identifies the preferred alternative (proposed action) that forms the basis for the proposed Forest Plan. Public comments on the draft Plan and the DEIS were used to develop the Final Environmental Impact Statement and selected Forest Plan. The final Forest Plan will be selected by the Regional Forester and documented in a Record of Decision that will be provided to the public.

All of the documents and planning records that chronicle the Forest planning process are available for inspection at the Forest Supervisor's Office, Tahoe National Forest, Highway 49 and Coyote Street, Nevada City, CA 95959, during regular business hours. These planning records contain the detailed information and processes in developing the Forest Plan as required in 36 CFR 219.12. They are incorporated by reference at appropriate points in the text of this FEIS and the Forest Plan.

Figure 1.1

TAHOE N.F.

HIERARCHY OF LAND MGMT. PLANNING IN THE NATIONAL FOREST SYSTEM



4/82

A glossary is located in the Plan to aid readers with abbreviations and unfamiliar terms

D. VICINITY OF THE FOREST

The Tahoe National Forest is in the north-central Sierra Nevada (Figure 1 2) Portions of Nevada, Placer, Plumas, Sierra, and Yuba Counties are within the Forest boundaries. The TNF is bounded on the north by the Plumas National Forest, on the east by the Toiyabe National Forest and the Lake Tahoe Basin Management Unit, and on the south by the Eldorado National Forest The TNF boundary encompasses 1,175,533 acres Of this total, 381,161 acres are privately owned.

The TNF is within one hour's drive from Sacramento, a half-hour's drive from Reno, and a three-hour's drive from most San Francisco Bay Area cities Several communities are within the Forest boundaries

Analyzed in the FEIS and Forest Plan are 794,374 acres of the TNF. Excluded from this analysis is that portion of the TNF that is in the Lake Tahoe Basin Management Unit (28,833 acres). Land within the Lake Tahoe Basin was declared a separate management unit by Presidential Proclamation in 1973

E. SCOPE OF ISSUES TO BE ADDRESSED

The Tahoe National Forest Land and Resource Management Plan is formulated to address public issues and management concerns related to the Forest These issues and concerns (referred to as issues in this EIS) and the associated questions were identified by the Interdisciplinary Team and indicate the scope and nature of the analysis needed for the EIS (40 CFR 1501.7) The issues represent important reasons for considering changes in the current management direction and are instrumental in formulating alternatives and understanding the consequences of implementing any one of the alternatives

The Pacific Southwest Regional Forester notified the public and other agencies of intentions to prepare a Land and Resource Management Plan for the TNF in the Federal Register, August 18, 1979. In November 1979, and again in November 1983, the Forest Supervisor published notices in local newspapers and in the Tahoe Planner newsletter that meetings would be held to accept public comment. Eight meetings to receive public comment were held in the TNF area of influence (refer to TNF planning records, specifically, 192216a(2)).

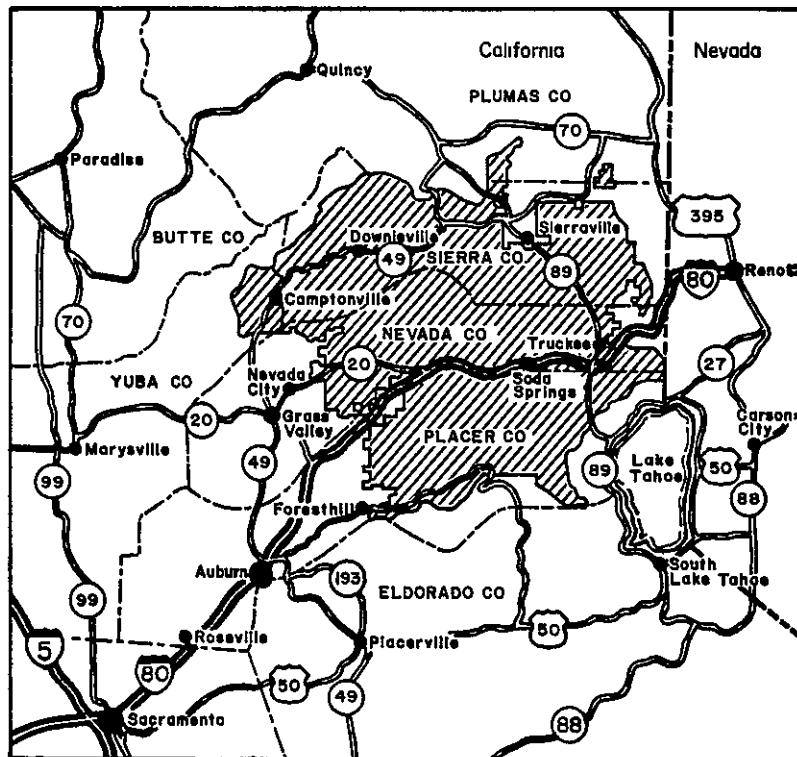
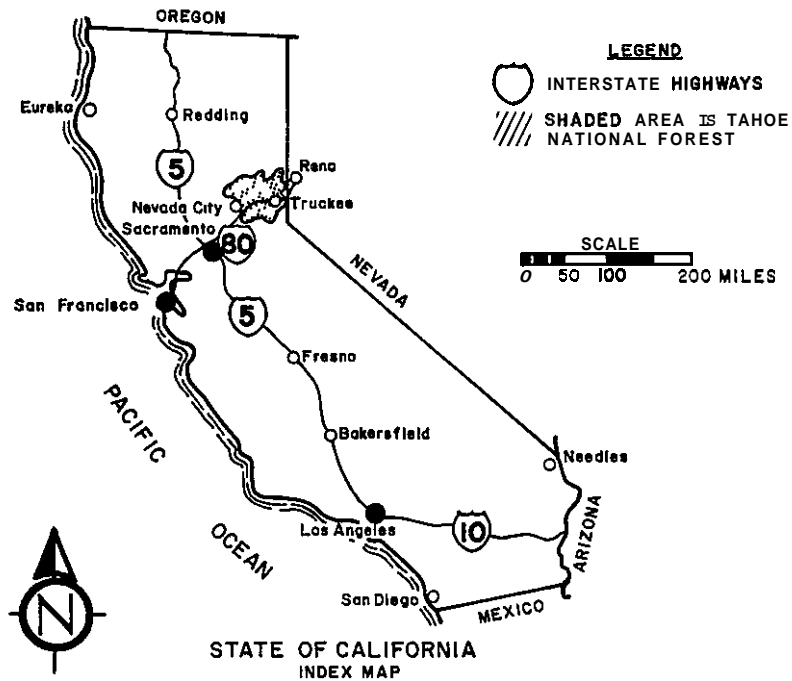
The meeting held in 1983 was to receive comments on seven additional roadless areas added to the planning process as the result of the October 30, 1982, revised NFMA regulations.

The Interdisciplinary Team identified and evaluated public issues, management concerns, and resource use and development opportunities, including those identified through public participation activities and coordination with other Federal agencies and State and local governments throughout the planning process Nine major issues were identified. These issues were approved by the Regional Forester and addressed in the planning process. Enacting the California Wilderness Act of 1984 resolved in terms of wilderness designation the inventoried roadless area issue (Issue #4) for this round of Forest planning.

In addition, the Pacific Southwest Regional Guide deferred 11 Regional issues, concerns, and opportunities to be answered during the Forest planning process. These have been incorporated into the list of Forest issues. These issues were addressed in at least one alternative in the DEIS. More detailed information on the scoping process and each of the issues can be found in Appendix A

Figure 1.2

Vicinity Map



Following release of the DEIS and Draft Forest Plan and a five-month comment period, a list of **12** major issues was developed. This list was the result of analysis of the comments contained in approximately **13,000** letters of input and oral testimony from two formal public hearings on the DEIS and Draft Plan. Some of these **12** issues are the same as those contained in the initial issue list, others are a variation of those initial issues, and others are new. The Forest Service response to the public comment can be found in Appendix A.

Following are:

A listing of initial issues.

A listing of the **12** major issues resulting from the Draft document review

A listing and analysis of the relationship between the initial and the new major issues.

Initial Issues

#1. Ownership Patterns and Land Uses

In what ways and to what **extent** can the Forest Service lessen or resolve conflicts in use between National Forest, private, and other public ownerships within the Tahoe National Forest boundary? Some of these conflicts result from the conflicting desires and needs of different owners and the public in their resource management objectives.

#2. Minerals

What emphasis by the Forest Service should be placed on the surface management of mineralized areas within the Tahoe National Forest? This includes both locatable and leasable mineral resources.

#3. Energy

How should management of the Tahoe National Forest contribute to conserving energy and meeting future energy needs?

#4. Inventoried Roadless Areas

How should all inventoried roadless areas be managed on the Tahoe National Forest?

This issue was resolved in terms of wilderness designation by enactment of the California Wilderness Act of **1984**, which designated the **18,705** acre Granite Chief Wilderness and released the **10** remaining roadless areas to other multiple uses for this round of planning (See Appendix A)

#5. Facilities

How can the Tahoe National Forest management, operation, and development of its facilities (roads, trails, administrative facilities) be optimized with respect to user interests, resource management and human resource needs, private landowner concerns, and economic efficiency?

#6. Forage, Wood, and Soils

How much area of the Tahoe National Forest should be managed for renewable commodity outputs (forage and wood)? How intensively should vegetation be managed to optimize commodity outputs? What Forest Service emphasis should be placed on the soil resource to maintain or enhance productivity?

#7. Water

How should the management of Tahoe National Forest resources respond to the demands and allocations for water quality, quantity, storage, and transmission?

#8. Recreation

To what extent should Tahoe National Forest land be allocated for recreation and scenic purposes? What should be the mix of recreation uses on Tahoe National Forest land?

#9. **Fish** and Wildlife Habitat

What Forest Service emphasis should be placed on wildlife habitat to maintain or enhance productivity, quality, and diversity?

Major Issues resulting from the **Draft** document review:

~~#1.~~ Spotted Owls

How many spotted owl habitat areas (SOHA's) should be established on the Tahoe National Forest and how should they be managed?

#2. Viable **Populations/Diversity**

How shall the Tahoe National Forest comply with National and Regional direction to maintain diversity and viable populations of animals?

#3. Budget

What effect will reduced budgets have on the implementation of the proposed Forest Plan?

#4. Roadless Areas

How should existing roadless areas be managed?

#5. Herbicide Use

Should herbicides be used on the Tahoe National Forest?

#6. Mt. Lola

How should the Lola Management Area be managed?

#7. **Urban/Rural** Wildland Interface

How should the Forest Service manage National Forest System lands that are adjacent to or affected by private lands, particularly those private lands developed or developing within this planning period for recreation, rural, residential, urban, or commercial uses.

#8. Soil **Erosion/Long-Term** Soil Productivity

With what practices can intensive timber management be conducted on Forest lands while maintaining soil productivity?

#9. **Riparian/Streamside** Management Zones

What level of management is acceptable in riparian areas/streamside management zones (SMZ's) that still protects riparian-dependent resources?

#10. Visual Quality

How should the visual resource be managed on the Tahoe National Forest?

#11. Clearcutting

What should be the role of clearcutting in meeting the vegetative management objectives of the Tahoe National Forest?

#12. Timber Supply

What should be the amount of timber supplied by the Tahoe National Forest?

Relationship between the initial and new major **Issues**:

This will be shown by comparing the new issues to the initial issues

#1 Spotted Owls - a new issue

#2 Viable Populations/Diversity - within parameters of **#9**. Fish and Wildlife Habitat

#3 Budget - a new issue.

#4. Roadless Areas - within parameters of **#4**. Inventoried Roadless Areas and **#8** Recreation.

#5. Herbicide Use - within parameters of **#6**. Forage, Wood, and Soils.

#6. Mt Lola - a new issue.

#7 Urban/Rural Wildland Interface- within parameters of **#1** Ownership Patterns

#8 Soil Erosion/Long-Term Soil Productivity - within parameters of **#6**. Forage, Wood, and Soils.

#9. Riparian/Streamside Management Zones - within parameters of **#7**. Water.

#10 Visual Quality -within parameters of **#8**. Recreation.

#11. Clearcutting- within parameters of **#6**. Forage, Wood, and Soils.

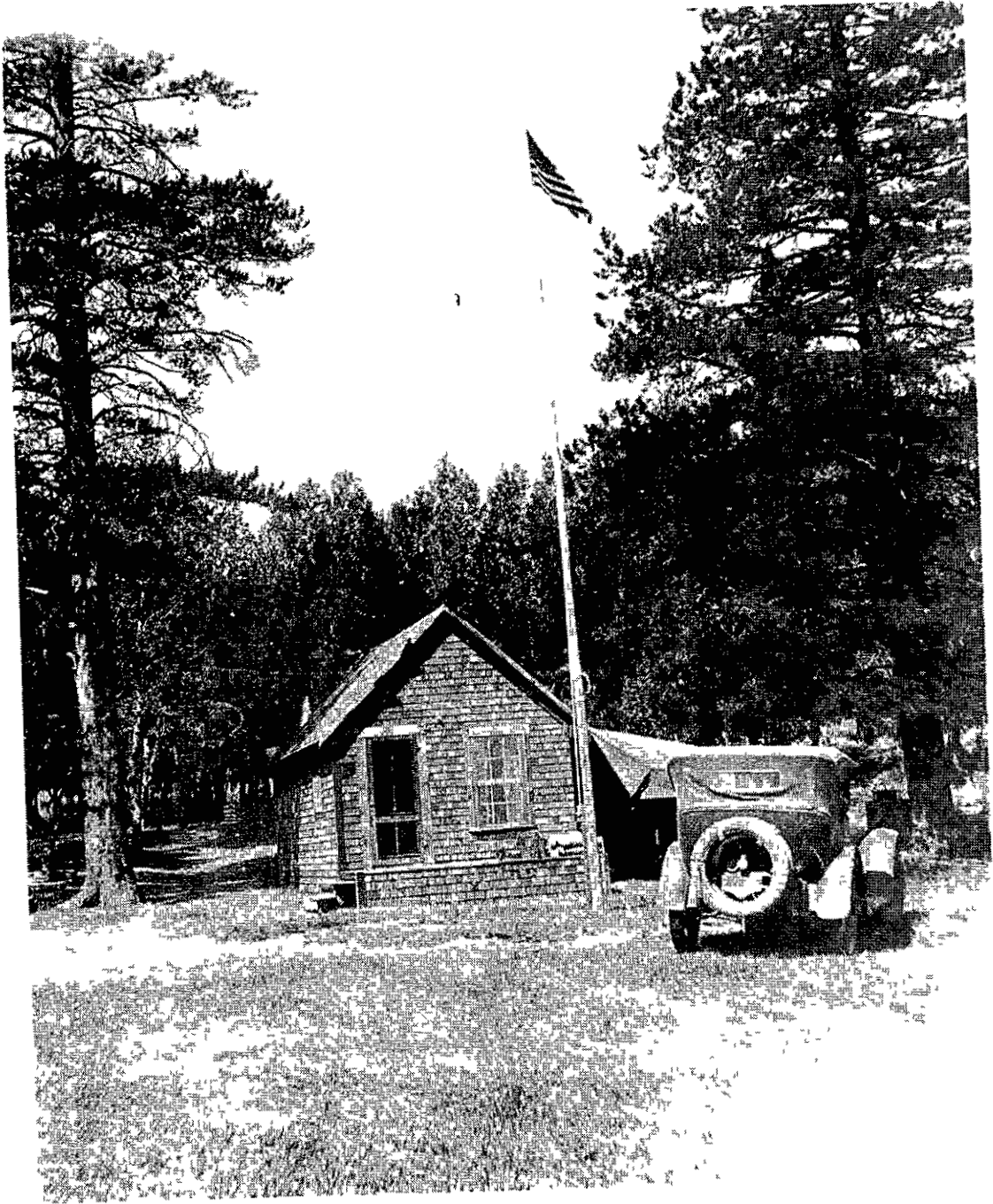
#12 Timber Supply - within parameters of **#6**. Forage, Wood, and Soils.

The role of Issues In the planning process.

It is important to note that these issues which you have just reviewed have significantly shaped the following sections of this document. That is because planning is an issue-driven process.

The Forest issues were identified when the planning effort was in its infancy, and again from public response to the Draft Plan and DEIS. These issues were used to focus the entire planning effort. First, they were used to identify what was important to address during planning. In the second step of the planning process, this knowledge was utilized to define what information would be gathered and analyzed. The highlights of the information so identified are presented in the Affected Environment (Chapter 3, FEIS)

The issues influenced the formulation of alternative plans, which are presented in Chapter 2, FEIS, (any of which could be selected for implementation). Finally, the issues were used during the comparison and evaluation of the various alternatives in Chapter 2, FEIS, (Alternatives Including the Proposed Action) and Chapter 4, FEIS, (Environmental Consequences)



Lewis Mill Guard Station along Route 40, 1929

CHAPTER 2

ALTERNATIVES INCLUDING THE PROPOSED ACTION

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CHAPTER 2 ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. INTRODUCTION

This chapter contains six sections, each dealing with a different aspect of alternative development. Section B presents the process used to develop alternatives. Section C contains a discussion of benchmarks and compares them in a display. Alternatives considered, but eliminated from detailed study, are summarized in Section D. Section E presents management direction and requirements that are common to all alternatives, and those alternatives that were considered in detail. Section F contains a detailed comparison of alternatives, displayed by outputs, costs, timing, and resolution of issues.

B. ALTERNATIVE DEVELOPMENT PROCESS

This section defines alternatives, describes the process used to develop alternatives (including benchmark analyses), and discusses limitations to the range of alternatives.

DEFINITION OF AN ALTERNATIVE

In the Forest planning process, an alternative is a unique combination of resource uses and a mix of management prescriptions that achieve a desired management direction, output, goal, or emphasis. These uses and prescriptions are formulated in many ways to produce a reasonable range of alternatives for evaluation.

The following laws, regulations, and directions are relevant to the concept of alternatives and how they are formulated:

1. The Forest and Rangeland Renewable Resources Planning Act (RPA), as amended by the National Forest Management Act (NFMA), which requires the preparation of a National Forest Land and Resource Management Plan.
2. The procedures (36 CFR 219) for implementing RPA, as amended.
3. The National Environmental Policy Act (NEPA), which requires disclosing the consequences of implementing the proposed action and alternatives.
4. The Council on Environmental Quality NEPA regulations (40 CFR 1500), which provide procedures for implementing NEPA.
5. The Pacific Southwest Regional Guide, which provides guidance and direction for National and Regional issues.
6. The Tahoe National Forest Forestwide standards and guidelines, which are specific management requirements designed to meet resource management goals, objectives, and development techniques that apply to all alternatives.

The requirements of the NEPA and NFMA establish guidelines for the development of alternatives. NEPA regulations (40 CFR 1502.14) require rigorous exploration and objective evaluation of all reasonable alternatives to the proposed plan, including a "no action" (no change) alternative, as well as alternatives not within the jurisdiction of the agency. The NEPA regulations also require identification and discussion of alternatives eliminated from detailed study.

NFMA regulations (36 CFR 219.12(f)) establish the following criteria for guiding the development of alternatives:

- o Each alternative will be capable of being achieved
- o A *no action. alternative (continuation of present management into the future) will be formulated that represents the most likely condition expected to exist in the future if current management direction were to continue unchanged
- o One or more alternatives will meet the RPA program specified in the Regional Guide.
- o Each alternative will provide for the orderly elimination of backlogs of needed treatment to restore renewable resources necessary to achieve the multiple use objectives of that alternative
- o Each identified major public issue and management concern will be addressed in one or more alternatives.
- o Each alternative will represent to the extent practicable the most cost-efficient combination of the management practices examined that can meet the objectives established in the alternative.

The NFMA regulations also require that each alternative state the following:

- o Purposes of the management direction proposed.
- o Resource management standards and guidelines
- o The goods and services to be produced, and the timing and flow of these resource outputs.
- o Conditions and uses resulting from the long-term application of the alternative

Under the NFMA regulations, the development of alternatives is based on management prescriptions, each of which is a strategy for managing the lands and resources of a given area. Each management prescription responds to issues or concerns and is composed of compatible practices that would attain desired resource management objectives on a specific management area.

The alternatives considered represent different combinations of management prescriptions in different locations to provide varying levels of outputs, goods, and services. The total possible set of management prescriptions is the same for all alternatives. Each alternative, however, has a particular combination of management prescriptions and area allocations that, in aggregate, meet the desired goals and objectives of the alternative. The mix of acres related to each prescription is different by alternative (see Table 2.11). A full description of each management prescription is found in the Management Prescriptions and Management Areas discussion of this chapter.

DESCRIPTION OF THE PROCESS USED TO DEVELOP ALTERNATIVES

The formulation of alternatives (Planning Action 5) is the culmination of Planning Actions 1 through 4 of the NFMA planning process (refer to Chapter 1 for all 10 planning actions). The following summarizes how Planning Actions 1 through 7 were accomplished on the TNF:

1. Major public issues were identified through public involvement. Forest Service management concerns were also identified and combined with the public issues to form an integrated list of issues and concerns.
2. Based on an analysis of the issues from the public scoping meetings, Forest Service management concerns, and resource development and use opportunities, the Interdisciplinary (ID) and Management Teams identified the nine major issues to be addressed in the Forest Plan. The issues were then applied to each subsequent step described below. (Appendix A contains a more detailed discussion of the scoping and screening process.)

3. The public issues, management concerns, and opportunities (ICO's) were consolidated into a set of planning questions (issues) to be answered. These issues and their subsets, called components and indicators, were used to develop planning criteria
4. Planning criteria were developed by the ID Team, recommended by the Management Team, and approved by the Regional Forester on May 12, 1981. The document titled **Planning Criteria** is available for review (planning records 1922.16a.7b). These criteria detail what information needed to be collected, methods of collection, accuracies, responsibilities, time schedules, and how the information would be presented.
5. Based on the planning criteria, the ID Team collected Forest resource data. These data are documented in the TNF planning records (1922.16a.7c), and are important in determining the TNFs capabilities for producing goods and services. For Forest planning purposes, these data were collected for specific land units called capability areas. Capability areas are units of land that are relatively homogeneous in their physical attributes, resource production potential, and potential environmental effects. Over 26,000 capability areas were identified on the TNF.
6. The capability areas were then aggregated into analysis areas according to common characteristics (physical, biological, and political). These analysis areas were used to analyze the resources of the TNF for *capability*, *availability*, and *suitability* for resource management. The *physical* capability and legal (or administrative) availability did not change in the analysis process. Suitability varied depending on the emphasis of each management alternative.
7. The ID Team developed resource coefficients (yield tables) for the analysis process from conclusions determined in the Analysis of the Management Situation (AMS). (Refer to the AMS and planning records (1922.16a.7b).)
8. All suitable prescriptions for a unit of land were defined prior to FORPLAN analysis. The suitability determination is documented in the TNF identification of Land Tentatively Capable, Available, and Suitable for Resource Management.
9. The TNF ID and Management Teams developed a comprehensive list of management standards and guidelines that could be applied to TNF land. This list is documented in the Reference Book of Management Practices. These practices allow for the achievement of the entire range of resource opportunities described in the AMS.
10. The development and analysis of the benchmarks included tests of the effects and sensitivities of prescriptions, management intensities, and land allocations. To facilitate analysis of the benchmarks and, later, the alternatives, a linear programming model, FORPLAN (Johnson, K.N., et al., 1980) was used. FORPLAN was used to allocate and schedule management activities while maximizing economic efficiency (present net value) or minimizing deviation from goals established under previously specified resource objectives. FORPLAN simultaneously applies management prescriptions to specific land areas and schedules activities to achieve the specified management objectives for the individual alternative. The model analyzes and selects the most economical output mix and schedule to accomplish the resource objectives. Based on this analysis, FORPLAN projects resource outputs and values over the planning period.
11. The outputs considered by prescription in the model include acres of vegetation treated, timber, range, water, cost plus loss from wildfire, dispersed recreation, developed recreation, and fish and wildlife.
12. The FORPLAN analysis process began with the following three types of analyses: base, constraint opportunity costs, and single-resource emphasis. Base and single-resource emphasis analyses are addressed as 'Benchmarks.'
13. The Forest analyzed four base scenarios to provide knowledge of the decision space, the cost of the minimum management requirements, and the sensitivity of nonmarket commodity outputs to assigned prices.

14. Constraint cost analyses were conducted to estimate the opportunity cost of protecting such resources as threatened and endangered animal species, soil and water productivity, vegetative habitat diversity, and vertebrate species viability. Three timber policies--nondeclining yield, culmination of mean annual increment, and dispersion of created openings--were tested to determine the opportunity cost of each policy constraint.
15. To analyze a broad range of reasonable resource management alternatives, as required by NEPA and NFMA, the ID Team identified upper and lower limits for a feasible range of resource outputs. These limits were identified through separate, single-resource emphasis analyses. These analyses identified maximum feasible and legal output levels for timber, forage, water, and wilderness. These analyses provided knowledge of resource production potentials and interactions among resource production processes. This knowledge was used to help formulate Forest alternatives. (See Section C later in this chapter and Appendix B for the benchmark descriptions.)
16. The ID Team developed management prescriptions and delineated management areas to spatially allocate FORPLAN alternative solutions. Each management prescription is a set of compatible directions, including standards and guidelines necessary to attain multiple-use goals and objectives, while applying the FORPLAN prescriptions. The management prescription provides a particular emphasis and contains all the compatible practices and activities that would occur on a management area in addition to the practices allocated by FORPLAN. Each management prescription applies to one kind of management area, within which all lands would be managed for one emphasis.
17. The Forest Supervisor, Deputy Forest Supervisor, Forest Staff, and the five District Rangers made up the Management Team. They were responsible for developing the final alternatives considered in detail in the DEIS. Three ad hoc groups were formed from the Management and ID Teams. These groups responded to the issues grouped by three categories: market (commodities), amenities, and developed recreation. Each group had the responsibility to develop as many alternatives as necessary to address the issues assigned to their group. The alternatives were formulated within given criteria. These criteria are laws, regulations, directions, public issues, TNF management concerns, and resource use and development opportunities (ICO's) and the physical capabilities of the TNF to produce goods. These alternatives were presented to the Management and ID Teams. The results of this process are described later in this chapter. The ID Team prepared the preliminary proposals using the mapped data and outputs from computer analyses (refer to planning records, specifically 192216a).
18. The Draft EIS and Draft Forest Plan were issued in January, 1986. Over 12,000 letters were received in response, which demonstrated the public's interest in management of the Forest. These comments were analyzed by the Forest Interdisciplinary and Management Teams. The Draft EIS alternatives were reviewed and several were modified to more clearly address the public issues and internal management concerns. The TNF worked closely with representatives of the timber and environmental communities to modify two of the DEIS alternatives, I and E, respectively, into Alternatives CMD and NMK. The Forest evaluated 19 plan alternatives during this review. Thus, the public review of the DEIS and Draft Plan helped focus on the major issues. The Preferred alternative in the Draft was modified as a result of public comments and additional analysis to become the Preferred (PRF) alternative, which is displayed in this document and more clearly defined in the Forest Plan.

LIMITATIONS TO THE RANGE OF ALTERNATIVES

Physical characteristics, statutory or judicial requirements, and contractual obligations limit the possible range of alternatives for the TNF. Specifically, these present significant limitations on the kinds and amounts of goods and services, the management options, and, thus, the range of viable alternatives that can be considered as part of this planning process. These are summarized below. (Refer to Chapter 3 for a detailed explanation of these characteristics.)

Alternate (Checkerboard) Ownership Pattern. About **381,161** acres (**32** percent) of the land within the TNF administrative boundary are owned by others. This consideration affects the potential use and development (or nondevelopment) of TNF lands

Classified Areas. The classification of the North Fork American Wild River (**5,788** acres), the Onion Creek Experimental Forest (**2,846** acres), and the Granite Chief Wilderness (**18,705** acres) would not change as a result of this planning.

Special Uses. There are **870** permits on about 22,000 acres that authorize the use of TNF lands. These range from cabins and resorts to ski areas, roads, utilities, and established water uses in and along reservoirs. Except for possible change when renewal is required, these permits would not change as a result of this planning

Withdrawals About **68,100** acres of existing and previously proposed withdrawals from mineral entry would not change

Accessible Terrain About **78** percent of the TNF is accessed by about **2,400** miles of road About **850** of the 2,400 miles are under the jurisdiction of the counties or the State, or are controlled by private landowners Approximately 15 percent of the remaining TNF system roads are cooperatively managed with other landowners. These authorities would not change.

wildfire. Wildfire cannot be avoided, mitigated, or eliminated regardless of the fire management policies or organization available

C. BENCHMARKS

Eight benchmark analyses were made using FORPLAN to establish an analytical base for developing alternatives and to provide a reference point to compare alternatives.

The benchmarks display physical, biological, and technical capabilities of the Forest. Benchmarks are not reasonable management alternatives because they provide for few multiple-use opportunities and are not limited by Forest Service policy, budget, discretionary constraints, spatial feasibility, or program or staffing requirements. They are physically and technically possible, but are not operationally feasible.

The benchmarks were formulated to display the TNF's minimum level of outputs and effects and to determine the maximum potential to produce individual resources such as timber, water, livestock forage, and wilderness. They determine the possibility for change and identify the boundaries of the decision space in which change can or must occur.

A complete technical description of and the modeling specifications for each benchmark developed in the TNF planning process is located in Appendix B and in the TNF Analysis of the Management Situation. The following discussion describes what was learned from each benchmark during the analysis process. After the discussion, Table 2.1 displays the outputs, cost, and present net value (PNV) of each benchmark. Finally, the conclusions reached through the benchmark analyses are summarized.

- 1 MLV - Minimum Level of Management. This benchmark shows the outputs and fixed costs of public ownership of the Forest. The management objective is to minimize cost. Activities are only those needed to protect life, health, and safety, prevent environmental damage, and manage unavoidable land uses. No outputs of timber, developed recreation, livestock forage production, or wildlife habitat improvement would occur. Incidental outputs of dispersed recreation use and water yield would occur.
- 2 FLW - Unconstrained Maximum Present Net Value (with limited timber harvest fluctuation and long-term sustained yield constraints). This benchmark provides the most economically efficient level of market outputs. The management objective is to maximize PNV. This benchmark is the

basis for evaluating the effects of adding minimum management requirements in future analyses. This benchmark's outputs are at the highest achievable levels for most priced resources.

3. **MMA** - Maximum Present Net Value, **with** Minimum Management Requirements (and nondeclining sustained yield and culmination of mean annual increment). As compared to the FLW benchmark above, this benchmark displays the cost of the minimum management requirements considered collectively. It forms the basis for evaluating requirements beyond the minimum management requirements. The management objective is to maximize PNV. All modeled outputs with either assigned or market values are analyzed.
4. **MKV** - Maximum Present Net Value, Market Values Only (with the same constraints as MMR). This benchmark maximizes the present net value of only those outputs that have established market values (timber, livestock forage, and developed recreation).
5. **TBR** - Maximum Timber Production for One Decade (with the same constraints as MMR). This benchmark defines the maximum possible timber output for the first decade given minimum management requirements and nondeclining sustained yield. With this timber volume goal for the first decade, resources are managed for maximum economic efficiency.

The opportunity cost of managing for maximum timber is an \$86 million decline in PNV compared to the MMR benchmark. The allowable sale quantity increased 18 MMBF compared to the MMR benchmark. Clearcut acres were 1,300 acres per year higher in the first decade but did not display a consistent relationship the following four decades. Timber suitable acres were 23,000 acres more than MMR because potential recreation sites were managed for timber production. Because potential developed sites and ski areas were managed for timber production, developed sites did not meet demand beyond the first decade, and downhill ski demand was never met.

6. **WLN** - Maximum Present *Net* Value with Maximum Wilderness (with the same constraints as MMR). In this benchmark all roadless areas not designated wilderness under the California Wilderness Act of 1984 are allocated to wilderness on the Forest. The management objective is to maximize economic efficiency.

The opportunity cost of managing for maximum wilderness was a decline in PNV of 2 percent from the MMR benchmark because of the allocation of 125,000 additional acres to wilderness. The allowable sale quantity declined 5 percent or 11.1 MMBF per year, although timber suitable acres declined 13 percent or 77,000 acres. The reduction in timber suitable acres reduces WFUDs and water yield generated indirectly by timber management activities.

7. **RGN** - Maximum Range Grazing for Five Decades (with the same constraints as MMR). This benchmark estimates the maximum capability of the Forest to provide commercial livestock grazing over the RPA planning horizon (five decades) subject only to minimum management requirements. The management objective is to maximize livestock forage production. Production of outputs that do not reduce grazing capacity are provided at economically efficient levels. Given these forage production goals, resources are managed to maximize economic efficiency.

The opportunity cost of managing for maximum range is a \$291 million decline in PNV compared to the MMR benchmark. The allowable sale quantity declined 12 percent. Timber suitable acres increased 4 percent because of the allocation of potential ski and developed recreation sites to timber production. Potential AUM's increased 163 percent in the first decade from the MMR benchmark to 55,000 AUM's per year. The demand for developed recreation was met through the third decade. Demand for downhill skiing was met through the second decade. Potential ski areas and developed sites were allocated to timber to obtain the associated transitory range AUM's.

8. **H2O** - Maximum Water Yield for Five Decades (with the same constraints as MMR). This benchmark estimates the capability of the Forest to provide maximum water yields over the RPA planning horizon (five decades) subject only to minimum management requirements. With these goals for water production, other outputs are produced at economically efficient levels.

The opportunity cost of managing for maximum water is a 4 percent decline in PNV compared to the MMR benchmark. The developed sites and downhill ski areas met demand through the second decade. Potential developed sites and downhill ski areas were managed for timber production to capture water yield. Water yield increased from the MMR benchmark less than 1 percent per year or 0.01 million acre feet.

CONCLUSIONS

The following conclusions were reached as a result of the benchmark analyses. These were carried forward to the formulation of alternatives. The benchmarks suggest that a potential exists for increasing all resource outputs through more intensive resource management.

Economic. The conclusions from not pricing nonmarket outputs (MKV) in the allocation results in no production of dispersed recreation above the background levels. Because of the link between timber and water, not pricing water in the allocation reduces timber outputs.

Timber. The TBR benchmark indicates that the TNF would be capable of producing timber nearly 25 percent above the current level if only the minimum management requirements were applied. Maximizing timber would have the most significant impact on developed recreation because potential developed sites would be managed for timber and developed recreation would be restricted to current capacity. Downhill skiing use only increases slightly from current capacity.

Timber production varied less than 20 percent among the single resource emphasis benchmarks. This variation reflects the linkages between the production of timber and other commodity outputs.

Range. The maximum range benchmark, RGN, indicates that the TNF could produce forage at over twice the current level. Higher forage production is due primarily to conversion of less palatable species to grass.

Water. Water production does not vary significantly between the unconstrained (FLW) and minimum level (MLV) benchmark analyses because the background amount accounts for the majority (89 percent) of all production. Converting existing vegetation to grass is the most productive practice to increase water yield.

Developed Recreation. When the management objective is to maximize PNV, potential recreation sites would be reserved for developed recreation to meet demand for four decades. Thirty-two percent of the existing potential developed recreation sites and 97 percent of the existing potential downhill ski site acreages are needed to meet projected demand. Downhill skiing is the most cost-effective land use.

When the objective is to maximize PNV, developed recreation (campground) sites are always rehabilitated to capture the full standard value. Sites are never shut down.

Dispersed Recreation. Dispersed recreation always meets demand unless it is constrained as in the minimum level (MLV) or is not valued as in the market (MKV) benchmarks. Dispersed recreation is always managed at standard when the objective is to maximize PNV.

Facilities. Facilities are always managed at the least cost level (building investment level) to provide minimum health and safety (maintenance) to existing facilities unless another level is required.

Fish and Wildlife. All nonstructural habitat improvements are implemented when WFUD's are valued, and the objective is to maximize PNV. Structural habitat improvements named LOGS, DEBRIS, BOULDR, and GZZLER are implemented in all benchmarks.

Fire Management The model selects the same fire program organization in all benchmarks.

The expected acres burned by fire programs among benchmarks (except the minimum level MLV) were similar in mature timber and differ only in relationship to plantation acres. The fire program organizations that have the least acres burned are Attack/Prevention, followed by As Attack and Current. The budget level is inversely related to expected acres burned (more funding, fewer acres burned). The program with the fewest acres burned would not be necessarily the most cost effective.

Wilderness. Roadless areas are never managed as wilderness when economics are the sole consideration. The maximum wilderness benchmark, WLN, shows that maximum wilderness and market outputs near current levels are feasible.

TABLE 2.1 - COMPARISON OF BENCHMARKS BY OUTPUTS AND ACTIVITIES

Per Year Outputs (Units) 1/ Base Year (1982)	Decade	MLV Min level	FLW Uncon- strained	MMR	MKV Market Values	TBR Max Timber	WLN Max Wild.	RGN Max Range	H2O Max Water
PNV (MM\$) 4%		1,358 8	4,733 0	4.2789	3,473 5	4,192 7	4,196 9	3,987 9	4,098 4
Discounted Benefits 1982 MM\$		1,5427	5,809 9	5,0419	4,157 4	4,993 1	4,918 7	4,795 7	4,892 8
Discounted Costs 1982 MM\$		183 9	1,076 9	763 0	683 9	800 4	721 8	807 8	794 4
Return to Treasury (MM\$/Yr) (Undiscounted 1982 \$) 1982 = \$37.42	1 2 3 4 5	00 00 00 00 00	101 0 116 0 107 8 94 6 90 2	49 3 691 81 2 940 1048	49 3 68 4 809 925 1039	52 7 72 7 857 101 8 1147	49 2 65 8 77 5 89 3 102 1	44.3 60 7 72 0 90.4 100 9	50 1 68 1 76 0 88 8 102 4
Budget (MM\$/Yr) 1982 = 187	1 2 3 4 5	3 4 3 4 3 5 3 5 3 5	39 0 42 8 40 0 45 8 44 8	26.4 263 276 31 7 36.7	244 23 7 24 6 27 6 332	285 28 0 30 7 32 4 34 3	243 25 1 270 302 35.1	285 26 0 356 37 0 351	262 26 1 346 38 5 386
Timber ASQ (MMBF/Yr) 1982 = 194.2 *	1 2 3 4 5	0.0 0.0 0.0 0.0 0.0	4476 370.4 306.3 253.2 209.0	225.0 225.0 225.0 225.0 225.0	2231 223 1 223.1 223 1 223 1	2432 243 2 2432 243 2 2432	2139 2139 2139 2139 2139	1984 1984 207 3 207 3 207 3	2197 219.7 2197 2197 219 7
Grazing (MAUM/Yr) 1982 = 20.0	1 2 3 4 5	0.0 0.0 0.0 0.0 0.0	32 5 32 6 31 2 28 9 32 9	20 9 20 7 20 6 18 8 18 7	18 8			54 9 55 1 58 9 60 7 56 9	21 3 21 4 22 6 21 1 19 3
Water (MM Acre Ft/Yr) 1982 = 2.00	1 2 3 4 5	2ca 199 198 198	2.26 2.26 2.17 2.16 2.14	2.13 2.13 2.07 2.06 2.06	2.12 2.07 2.07 2.07 2.05	2.14 2.15 2.08 2.07 2.04	2.12	2.17 2.16 2.16 2.17 2.10	2.17 2.16 2.16 2.17 2.10
Peregrine Falcon (No Pairs) 1982 = 0 pair	1-5	3	3	3	3	3	3	3	3
Lahontan Cutthroat Trout 1982 = 5 populations	1-5	6	6 1	6	6	6	6	6	6
Bald Eagle 1982 = 0 breeding pair	1-5	5	5	5	5	5	5	5	5
Potential Spotted Owl Pairs (Pairs) 1982 = 110	1 2 3 4 5	110 120 131 143 152		99 82 70 55 43	99 83 71 60 45	97 82 69 54 40	101 86 70 56 41	103 90 74 59 46	100 85 69 57 40

Potential yield from standard, special, and marginal components

TABLE 2.1 - COMPARISON OF BENCHMARKS BY OUTPUTS AND ACTIVITIES (CONT.)

Per Year Outputs (Units) 1/ Base Year (1982)	Decade	MLV Min level	FLW Uncon- strained	MMR	MKV Market Values	TBR Max Timber	WLN Max Wild	RGN Max Range	H2O Max Water
Wildlife & Fish User Days (MWFUD) 1982 = 196 0	1	111 9	238 7	238 3	226 4	243 1	222 1	242 7	242 2
	2	130 7	278 4	277 9	265 8	283 4	258 8	283 2	282.4
	3	149 4	316 7	316 1	304 2	322 5	294 2	322 0	321 4
	4	168 1	353 0	352 4	342 1	359 6	327 9	359 2	358 2
	5	187 7	381 8	381 1	379 8	389 0	353 9	388 7	287 7
Wildlife User Days (MWFUD) 1982 = 105 8 (WFUD)	1	55 3	171 3	145 5	149 5	175 7	129 1	164 9	149 1
	2	64 7	199 8	169 5	175 9	204 5	150 3	192 4	173 8
	3	73 9	226 9	192 4	201 4	232 5	170 3	218 7	197 4
	4	83 1	252.2	213 3	226 1	258 4	188 6	242 7	218 7
	5	92 8	268 8	226 3	250 8	276 6	198 9	259 2	232 6
Fish User Days (MWFUD) 1982 = 90 2	1	56 6	67.4	92 9	76 9	67 4	93 0	77 8	93 1
	2	66 0	78 6	108 4	89 9	78 9	108 5	90 8	108 5
	3	75 5	89 8	123 7	102 8	90 0	123 9	103 5	124 0
	4	85 0	100 8	136 1	115 6	101 2	139 3	116 5	139 5
	5	94 9	112 0	154 8	129 0	112 4	155 0	129 5	155 1
Direct Habitat Improvement Deer (MWFUD) 1982 = 3 1	1	0 3	3 8	3 8	3 5	3 9	3 2	3 9	3 9
	2	0 3	4 3	4 3	3 9	4 5	3 8	4 5	4 4
	3	0 4	4 9	4 9	4 5	5 1	4 3	5 1	5 1
	4	0 4	5 4	5 4	5 1	5 5	4 7	5 5	5 5
	5	0 5	5 6	5 6	5 6	5 8	4 9	5 8	5 8
Other (Except T&E) (MWFUD) 1982 = 2 0		0 2	2 5	2 5	2 3	2 6	2 2	2 6	2 6
		0 2	2 9	2 9	2 7	3 0	2 5	3 0	3 0
		0 2	3 2	3 2	3 0	3 3	2 8	3 3	3 3
	4	0 3	3 6	3 6	3 3	3 7	3 1	3 7	3 7
	5	0.3	3.8	3.7	3 7	3 9	3 3	3 9	3.9
Fish (Except T&E) (MWFUD) 1982 = 0 6	1	0 1	0 7	0 7	0 6	0 7	0 6	0 7	0 7
	2	0 1	0 8	0 8	0 8	0 8	0 7	0 8	0 8
	3	0 1	0 9	0 9	0 9	0 9	0 8	0 9	1 0
	4	0 1	1 0	1 0	1 0	1 1	0 9	1 1	1 1
	5	0 1	1 1			1 1	0 9	1 1	1 1
induced Habitat Improvement Deer (MWFUD) 1982 = 61 6	1	5 3	74 5	74 5	68 0	77 0	65 0	76 9	76 5
	2	6 4	87 0	86 8	80 3	89 8	75 7	e97	89 3
	3	7 3	98 6	98.5	91 9	101 9	85 7	101 8	101 2
	4	8 2	109 2	109 0	103 2	112 9	94 7	112 8	112 1
	5	9 0	116 6	114 9	114 2	119 1	99.1	119 0	118 4
Mher (Except T&E) (MWFUD) 1982 = 41 0	1	3 6	49 8	49 6	45 3	51 4	43 4	51 2	51 0
	2	4 2	58 0	57 9	53 5	59 8	50 5	59 8	59 5
	3	4 8	65 8	65 6	61 3	67 9	57 1	67 8	67.5
	4	5 4	72 9	72 6	68 8	75 3	63 2	75 2	74 7
	5	6 0	76 9	76 6	76 1	79 5	66 0	79 3	79 0
Fish (Except T&E) (MWFUD) 1982 = 5 4	1	0 5	3 0	7 2	6 5	7 2	6 5	7 2	7 4
	2	0 6	4 2	8 4	7 8	8 7	7 3	8 4	8 6
	3	0 7	5 3	9 5	9 0	9 8	8 3	9 6	9 8
	4	0 8	6 4	10 6	10 1	11 0	9 2	11 6	11 0
	5	0 9	7 2	11 2	11 1	11 6	9 6	11 2	11 5

TABLE 2.1 - COMPARISON OF BENCHMARKS BY OUTPUTS AND ACTIVITIES (CONT.)

Per Year Outputs (Units) 1/ Base Year (1982)	Decade	MLV Min level	FLW Uncon- strained	MMR	MKV Market Values	TBR Max Timber	WLN Max Wild	RGN Max Range	H2O Max Water
Animal Numbers2/ Deer Low High 1982 = 10,000-15,000 animals		10,800 12,000	10,000 15,100	10,400 16,100	10,100 15,700	10,100 14,200	9,800 11,900	9,500 12,000	10,700 13,900
Resident Fish (Non T&E) (M Pounds) 1982 = 250-255 3/		245	192	249	218	218	263	218	205
Developed Site (MRVD's/Yr) 1982 = 1,388	1 2 3 4 5	0 0 0 0 0 0 0.0 0 0	1,976 2,393 2,784 3,129 3,129	1,976 2,393 2,784 3,129 3,129	1,976 2,393 2,784 3,129 3,120	1,976 2,185 2,185 2,185 2,185	1,976 2,393 2,784 2,784 2,784	1,976 2,185 2,185 2,185 2,185	1,976 2,393 2,393 2,393 2,393
Ski Areas (MRVD's/Yr) 1982 = 498	1 2 3 4 5	0 0 0 0 0 0 0.0 0 0	292 379 492 €39 639	292 379 492 €39 830	292 379 492 639 830	291 291 291 291 291	292 379 492 629 629	292 379 379 379 379	292 332 332 332 332
Wilderness Use (MRVD's/Yr) 1982 = 0	1 2 3 4 5	0 0 0 0 0 0 0 0 0 0	55.4 55.4 55.4 55.4 55.4	55.4 55.4 55.4 55.4 55.4	55.4 55.4 55.4 55.4 55.4	55.4 55.4 55.4 55.4 55.4	91.2 117.9 152.9 197.8 223.4	55.4 55.4 55.4 55.4 55.4	55.4 55.4 55.4 55.4 55.4
Dispersed Recreation (MRVD's/Yr) 1982 = 2,447	1 2 3 4 5	1,171 1,369 1,567 1,765 1,962	2,925 3,436 3,944 4,452 4,960	2,925 3,436 3,944 4,452 4,960	1,171 1,369 1,567 1,765 1,962	2,925 3,436 3,944 4,452 4,960	2,925 3,436 3,944 4,452 4,960	2,925 3,436 3,944 4,452 4,960	2,925 3,436 3,944 4,452 4,452
Road New Const - Timber (Miles/Yr) 1982 = 39	1 2 3 4 5	0 0 0 0 0.0 0 0 0 0	41.2 61.9 26.7 42.7 18.6	39.6 23.3 17.1 21.5 15.0	36.2 24.5 17.8 21.8 15.6	44.5 31.3 32.8 17.5 9.9	27.7 1.94 1.26 14.5 10.0	40.4 25.4 29.4 26.7 10.2	31.4 24.1 29.0 35.9 14.2
Road Reconst - Timber (Miles/Yr) 1982 = 51	1 2 3 4 5	0 0 0 0 0 0 0 0 0 0	60.3 19.0 26.1 10.5 18.8	28.2 16.9 14.8 7.3 14.5	26.3 16.8 15.5 7.2 13.2	30.8 17.2 11.7 130 12.8	26.8 1.77 1.34 11.6 11.1	29.9 1.28 26.0 1.92 9.8	31.8 16.0 24.4 15.5 13.8
Road Mice - Timber (Miles/Yr) 1982 = 165	1 2 3 4 5	0 0 0 0 0 0 0 0 0 0	221.2 135.0 104.0 99.2 78.9	108.8 65.8 53.7 57.0 75.7	95.3 67.4 56.2 57.4 72.9	124.5 60.6 60.8 65.4 62.1	98.6 72.6 46.6 55.1 74.9	126.0 54.4 111.9 105.0 41.0	118.2 62.9 110.5 109.5 66.0
Road Const - Recreation (Miles/Yr) 1982 = 4	1 2 3 4 5	0.0 0 0 0 0 0 0 0 0	0 0 0 2 0 4 0 4 0 0	0 0 0 2 0 4 0 4 0 0	0 0 0 2 0 4 0 4 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 2 0 4 0 4 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 2 0 0 0 0 0 0

TABLE 2.1 - COMPARISON OF BENCHMARKS BY OUTPUTS AND ACTIVITIES (CONT.)

Per Year Outputs (Units) 1/ Base Year (1982)	Decade	MLV Min level	FLW Uncon- strained	MMR	MKV Market Values	TBR Max Timber	WLN Max Wild	RGN Max Range	H2O Max Water
Road Maintenance- Recreation (Miles/Yr) 1982 = 345	1	00	125 2	1252	1252	115 3	1216	115.3	117 5
	2	00	127 2	1272	127 2	115 3	1236	115.3	119 5
	3	00	131 2	131 2	131 2	115 3	127 6	115 3	119 7
	4	00	134 9	134 9	134 9	115 3	127 9	115 3	119 7
	5	00	1352	1352	1352	1153	1279	115 3	119 7
Clearcut Acres (Acres/Yr) 1982 = 3,150	1	00	16,487	8,280	7,105	9,644	7,437	9,780	9,101
	2	00	10,315	4,913	5,745	4,176	4,089	4,593	4,606
	3	00	7,075	4,631	4,752	5,406	3,947	9,647	9,720
	4	00	7,133	4,715	1,047	5,451	4,789	5,106	5,425
	5	00	7,685	5,701	5,482	5,649	6,143	3,664	5,182
Shelterwood Seed Step (Acres/Yr) 1982 = 2,600	1	0.0	11,544	0	0	0	0	0	0
	2	00	1,427	811	117	2,836	2225	117	869
	3	0.0	1,968	34	130	0	103	0	0
	4	0.0	1,500	882	946	242	0	4,033	3,925
	5	0.0	0	882	855	0	3671	0	555
Commercial Thinning (MMBF/Yr) 1982 = 1 2	1	00	9.4	11.0	11.8	11 8	106	8 6	6 0
	2	00	0.0	0.0	0.0	0 0	0 0	0 0	0 0
	3	00	0 0	5.3	4.8	6.4	2 6	1 8	4 8
	4	00	5.3	5.2	5.2	5 2	5 1	3 1	5 1
	5	00	126 1	20.5	6 5	13.8	192	122	174
Timber Sutable (Acres) LTSY (MMBF) Ending Inventory (MMBF)		00	576,864	595,982	595,982	618,918	518,613	617,753	614,828
		00	297.8	271.1	271.1	282.6	235.0	276.7	267.5
		00	12,541	15,304	15,304	15,896	12,821	15,641	15,793
Wilderness Sutable (Acres)		16,705	18,705	18,705	18,705	18,705	143,584	18,705	18,705
Nonstructural Wildlife (Projects)		0	486	486	0	486	486	486	486
Fire Program 4/	1	MINIMIN	BASIAKP	BASIAKP	BASIAKP	BASIAKP	BAS/AKP	BASIAKP	BASIAKP
	2	MINIMIN	BAS/AKP	BASIAKP	BASIAKP	BASIAKP	BASIAKP	BASIAKP	BASIAKP
	3	MIN/MIN	BAS/AIR	BAS/AIR	BASIAIR	BASIAIR	BASIAIR	BASIAIR	BASIAIR
	4	MINIMIN	BASIAIR	BASIAIR	BASIAIR	BASIAIR	BASIAIR	BASIAIR	BASIAIR
	5	MINIMIN	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP
Burned Acres (Acres/Yr) 1982 = 1,038	1	5,944	1,163	1,065	1,048	1,085	1,052	1,050	1,077
	2	5,944	1,335	1,135	1,131	1,144	1,110	1,116	1,143
	3	5,944	1,560	1,319	1,306	1,369	1,306	1,366	1,402
	4	5,944	1,655	1,353	1,331	1,411	1,341	1,395	1,442
	5	5,944	1,305	1,052	1,055	1,076	1,068	1,131	1,159

1/ See the Glossary in the Plan for definition of terms

2/ The expected low-high range over decades 1-5 is based on the amount of capable-suitable habitat adjusted to reflect the biological factors

D. ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

The 13 alternatives in this category, in conjunction with the 6 alternatives considered in detail, represent a full range of alternatives for the Tahoe National Forest. Together, the 19 alternatives represent a wide range of emphases and outputs on the Forest and address all the issues and concerns. Furthermore, the alternatives provide a range of production for each Forest resource output as appropriate to respond to the issues and concerns

TABLE 22 - DISPOSITION OF ALTERNATIVES FORMULATED

No.	Alpha Code and Name	Disposition
1	CEE (Constrained Economic Efficiency)	incorporated in all alternatives
2	CEF (CEE with Forest Constraint)	Incorporated in all alternatives
3	MKT (Market Opportunities Emphasis)	Forest constraints applied to form Alternative CMD
4	AMN (Amenities or Nonmarket Emphasis)	Forest constraints applied to form Alternative NMK
5	PRO (High Productivity)	Considered but eliminated
6	LBU (25% Budget Reduction from Current)	Incorporated in Alternative NMK
7	WLI (SPNM and Output Investments)	Forest constraints applied to form Alternative JJJ
8	DDD (Wildlife)	Considered but eliminated
9	FFF (Motorized Recreation)	Considered but eliminated
10	GGG (Nonmotorized Recreation)	Considered but eliminated
11	HHH (Range/Timber)	Considered but eliminated
12	JJJ (Amenity/Commodity)	Considered but eliminated
13	KKK (Preferred with Departure)	Considered but eliminated
14	PRF (Preferred)	Considered in detail
15	CUR (Current Management)	Considered in detail
16	RPA (1980 RPA)	Considered in detail
17	CMD (Commodity)	Considered in detail
18	NMK (Nonmarket)	Considered in detail
19	UNE (Uneven-age)	Considered in detail

All 13 alternatives not described in detail were fully developed, narratively described, and analyzed through FORPLAN prior to their elimination. These alternatives were considered by the IDT and Management Team, along with the six alternatives that are presented in detail, before making the decision that they were not needed as implementable alternatives. The primary reasons were that they were similar to other alternatives, displayed nothing unique, or provided limited resolution of or responsiveness to public issues and concerns. Table 2.3 summarizes the outputs for these alternatives. In most instances the goals of the eliminated alternatives are embodied in one or more of the final alternatives, which have less adverse impact or more beneficial output. The following alternatives were eliminated

1. CEE - Constrained Economic Efficiency

This alternative displayed the most economically efficient allocation and schedule for meeting minimum management and minimum implementation requirements. It measured the opportunity cost of adding the scenic highway constraint when compared to the MMR benchmark. Disposition: CEE provides the foundation for all Forest alternatives. It does not respond to the full range of issues raised during scoping. As such, it is incorporated into all alternatives considered in detail.

2. CEF - Forest Constraint

This alternative added the Carman Valley Watershed protection constraint to those of CEE. This is the only constraint common to all the Forest alternatives considered in detail. CEF provided a measure of the opportunity cost of protecting the Carman Valley Watershed. All alternatives considered in detail are compared to CEF to display the degree of change in costs, benefits, and PNV. Disposition: CEF is expanded with different emphasis in all alternatives considered in detail

3. MKT - Market Opportunities Emphasis

This alternative emphasized high output levels of market resources (timber, range, minerals, etc) with nonmarket outputs at economically efficient levels. Opportunities to increase receipts from activities that contribute income

to the US Treasury are expanded. MKT responds to two Forest issues (#6) forage, wood and soils and (#8) recreation. Timber targets are constrained to meet or exceed 170 MMBF in 1990 and 210 MMBF by 2030. Disposition: The MKT theme is developed in Forest Alternative CMD, which is considered in detail and emphasizes high output levels of market resources.

4. AMN - Amenities or Nonmarket Emphasis

This alternative emphasized high output levels of nonmarket resources (fish and wildlife, recreation, wilderness, etc.) with market outputs at economically efficient levels. AMN responded to four Forest issues' (#4) inventoried roadless areas, (#7) water, (#8) recreation, and (#9) fish and wildlife habitat. AMN reflects assumptions of high levels of demand for amenity resources. Disposition: The AMN theme is developed in Forest Alternative NMK, which is analyzed in detail and emphasizes high output levels of amenity resources.

5. PRO - High Productivity

This alternative determined the effects of meeting timber targets of 230 MMBF by the year 2000 and at least 215 MMBF by the year 2030. Nonmarket goods and services are produced at economically efficient levels. Disposition: The timber targets are met or exceeded in Alternatives DDD and CMD, the latter which is presented in detail. For this reason, and because PRO resulted in fluctuating timber outputs, this alternative was eliminated from detailed study.

6. LBU - 25% Budget Reduction from Current

This alternative estimates the expected outputs and services that could be provided in the future if the current budget was reduced by 25 percent. Disposition: This limited-budget alternative is incorporated in Forest Alternative NMK, which is discussed and analyzed in detail.

7. WLI - SPNM and Output Investment

This alternative displays the potential to maintain or increase commodity outputs while designating quality roadless areas to semi-primitive nonmotorized recreation use. Disposition: The WLI theme is developed in Alternative JJJ and NMK, the latter which is considered in detail and emphasizes semi-primitive nonmotorized recreation and high commodity outputs.

8. DDD - Wildlife

This alternative emphasized the achievement of high outputs of fish and wildlife commodity and amenity benefits by improving and developing their structures and habitats. It would manipulate vegetation to benefit the rarest species using range, timber, and other functional activities along with direct habitat improvements. This alternative responded to two forest issues: (#6) forage, wood, and soils and (#9) fish and wildlife habitat.

The results of this alternative were similar to the CMD and RPA alternatives, which are both considered in detail. After developing and analyzing the results of this alternative, the IDT recommended and the Management Team determined that it provided limited resolution to the public issues and directed that it was not needed as an implementable alternative.

9. FFF - Motorized Recreation

This alternative emphasizes the achievement of high output levels of motorized recreation commodity and amenity benefits by emphasizing motorized recreation, development of downhill ski areas, and development of recreation sites for a variety of motor vehicle uses. Included are opportunities for four-wheel drive vehicles, motorcycles, snowmobiles, motorboats, motorhomes, and general highway driving. Resolved in favor of motorized recreation are any conflicts with nonmotorized recreation. This alternative responded to Forest issue (#8) recreation.

The results of this alternative were similar to the CMD and RPA alternatives for the miles and acres available for OHV use, and similar to the UNE alternative for visual and roaded recreation emphasis. After developing and analyzing the results of this alternative, the IDT recommended and the Management Team determined that it

displayed nothing unique and provided limited responsiveness to the public issues and directed that it was not needed as an implementable alternative.

10. GGG - Nonmotorized Recreation

This alternative emphasizes the achievement of high output levels of nonmotorized recreation amenity benefits with commodity outputs at economically efficient levels by emphasizing nonmotorized recreation activities, such as Nordic skiing, hiking, and dispersed camping. Resolved in favor of nonmotorized recreation are any conflicts with motorized recreation.

The results of this alternative were similar to the NMK alternative for the levels of timber management intensity, the objectives for visual quality, and the allocation of SPNM acres. After developing and analyzing the results of this alternative, the IDT recommended and the Management Team determined that it displayed nothing unique and provided limited resolution to the public issues and directed that it was not needed as an implementable alternative.

11. HHH - Range/Timber

This alternative emphasizes the achievement of high range and timber commodity outputs while providing amenity benefits at economically efficient levels. It emphasizes intensive management of the forage resource on permanent range and nonprime forest land while maximizing timber opportunities on prime forest land. (Prime forest land is capable of growing 85 or more cubic feet of timber per acre per year.) It resolves in favor of range and timber commodity resources any conflicts with the amenity resources. This alternative responded to Forest issue (#6) forage, wood, and soils.

The results of this alternative were similar to the RPA alternative for timber, and greatly exceeded the RPA grazing targets. After developing and analyzing the results of this alternative, the IDT recommended and the Management Team determined that it provided limited responsiveness to the public issues, would create unacceptable conflicts among the grazing, riparian, and water resources and unacceptable environmental degradation, and directed that it was not needed as an implementable alternative.

12. JJJ - Amenity/Commodity

This alternative emphasizes the achievement of quality recreation, amenity benefits, and high commodity outputs. It emphasizes semi-primitive, nonmotorized recreation for quality roadless areas. On all other lands it emphasizes capital investment commodity production to mitigate losses for lands managed for semi-primitive, nonmotorized recreation. This alternative responded to Forest issues (#2) minerals, (#6) forage, wood, and soils, and (#8) recreation.

The results of this alternative were similar to the RPA alternative. The passage of the California Wilderness Act created the Granite Chief Wilderness, eliminated all the wilderness candidate areas on the TNF, and made this alternative unnecessary. Thus, after developing and analyzing the results of this alternative, the IDT recommended and the Management Team determined that it provided limited resolution to the public issues and directed that it was not needed as an implementable alternative.

13. KKK - Preferred with Departure

In the draft EIS, departure opportunities were evaluated to determine if allowing a departure from the principle of nondeclining flow of timber would better meet the multiple-use objectives of the proposed Forest Plan. The departure alternative is not studied in detail because the overall objectives of multiple use management are not enhanced

TABLE 2.3 - COMPARISON OF ALTERNATIVES ELIMINATED FROM DETAILED STUDY BY OUTPUTS AND ACTIVITIES

YEARLY OUTPUTS (units) 1/	DECADE	CEE	CEP	MKT	PRO	LBU	AMN	WLI	DDD	PPP	GCG	HHH	JJJ	KKK
Bald Eagle (Pairs) 1982 = 0	1-5	2	2	2	2	2	2	2	2	2	2	2	2	2
Potential Spotted Owl Habitat (M Acres) 1982=33,000	1 2 3 4 5	49 49 47 44 43	49 49 47 44 43	49 49 47 44 44	48 45 43 42 42	56 57 59 63 63	57 59 60 62 61	49 49 48 44 41	48 46 46 43 41	55 57 58 59 58	56 58 59 61 60	49 49 48 47 47	49 49 50 49 49	52 51 52 52 51
Wildlife & Fish User Days (MWFUD) 1982 = 196 0	1 2 3 4 5	238 4 277 9 316 2 352 4 385.7	238.4 277 9 316 2 352 4 381.1	237 6 277 2 315 2 351 4 380.0	238 4 277 9 316.2 352 4 381 1	213 8 250 7 286 4 320 2 355.7	215 2 250 5 284 7 317 3 342.2	228 3 265 9 302 5 337 2 364 1	241 0 280 0 318 0 355 0 393 0	234 0 272 0 311 0 347 0 385 0	235 0 274 0 312 0 349 0 387 0	228 0 267 0 305 0 352 0 380 0	232 0 271.0 309 0 346 0 384 0	237 0 276 0 314 0 351 0 389 0
Wildlife User Days (MWFUD) 1982 = 105.8	1 2 3 4 5	145 5 169.5 192 5 213 3 226 3	145 5 169 5 192.5 213 3 226 3	160 3 186.7 211 4 235 4 251 0	171 0 199 3 226 5 251 6 269.1	126 3 148.5 169.6 189.1 209 2	122 5 142 4 161.3 178 6 187 8	135 0 157 1 178 2 197 4 208 5	138 0 160.0 181 0 201 0 221.0	134 0 156 0 178 0 199 0 219.0	135 0 157 0 177.0 197 0 217 0	131 0 153 0 174 0 195 0 216 0	129 0 152 0 174 0 193 0 213 0	134 0 156 0 177 0 197 0 217 0
Fish User Days (MWFUD) 1982 = 90 2	1 2 3 4 5	92.9 108.4 123.7 139 1 154 8	92 9 108.4 123 7 139 1 154.8	77 3 90 5 103.3 116.0 129 0	67 4 78 6 89.7 100 8 112 0	87.5 102 2 116.8 131 1 146 5	92 7 108 1 123 4 138.7 154 4	93 3 108.8 124 3 139 8 155 6	103 0 120 0 137 0 154 0 172 0	100 0 116 0 133 0 148 0 166 0	100.0 117 0 135 0 152.0 170 0	97.0 114 0 131.0 147 0 164 0	103 0 119 0 135 0 153 0 171.0	103 0 120 0 137 0 154 0 172.0
Direct Habitat Improvement-Deer (MWFUD)1982 = 3.1	1 2 3 4 5	3 8 4 3 5 4 5 6	3 8 4 3 4 9 5 6	4 3 4 9 5 4 5 6	3 8 4.3 4 9 5.4 5.6	3.0 3 5 4 1 4 6 5 0	3 1 3 5 4 0 4 4 4 6	3 4 4 0 4 5 5.0 5 2	7 9 7.9 7 9 1.3 7 3	4.0 4 0 4 1 3 4 3 4	5.3 5 3 5 3 4 7 4 8	3 7 3 6 3 7 4 7 2 9	4 0 4 0 4 1 3 4 3.3	6 0 6 0 6 0 b 0 6 0
Other (Except T&E) (MWFUD) 1982 = 2 0	1 2 3 4 5	2.5 2.9 3.2 3.6 3.7	2.5 2 9 3.2 3.6 3.7	2.5 2 9 3 2 3 5 3.7	2 5 2 9 3 2 3.6 3 7	2 0 2 4 2.7 3 1 3 3	2 0 2 4 2.7 3 0 3 1	2 3 2 6 3 0 3 3 3 5	5 3 5 3 5 3 4.9 4.9	2 7 2.7 2.7 2 3 2 3	3 6 3.6 3.6 3 1 3 1	2 4 2.4 2 4 2 0 2 0	2.6 2.6 2 6 2 2 2 2	4 0 4.0 4 0 3 0 4 0
Fish (Except T&E) (MWFUD) 1982 = 0 6	1 2 3 4 5	0 7 0 8 0 9 1.0 1.1	0 7 0 8 0 9 1 0 1 1	0 7 0 8 0 9 1 0 1 1	0 7 0.8 0.9 1 0 1.1	0 6 0 7 0.8 0 8 0.9	0 6 0 7 0 7 0 8 0.9	0 6 0.7 0 8 0 8 1.0	1.5 1 5 1 5 1 4 1 4	0 8 0 8 0 8 0 6 0.6	1 0 1 0 1 0 0 9 0 9	0 7 0 7 0 7 0 6 0 6	0 7 0 7 0.7 0.6 0 6	1 0 1 0 1 0 1 0 1 0
Deer (MWFUD) 1982 = 61 6	1 2 3 4 5	74 5 86 8 98 5 109 0 114.9	74.5 86.8 98 5 109 0 114 9	74.0 86 4 97 9 108 5 114 3	74 5 86 8 98 5 109 0 114.9	60 5 71 3 81 4 90 5 100 0	61 3 71 2 80 5 89 0 92 7	68.4 79 6 90 2 99 7 104 5	71 2 83 2 94 9 106 7 118.7	71 2 82 8 95.6 107 4 118 7	70 5 81 8 92.9 104 5 115 8	66.5 79.0 90 6 102 7 113.8	69 4 82 3 94 1 106 1 117 3	70 0 83.0 95 0 105 0 117 0

TABLE 2.3 - COMPARISON OF ALTERNATIVES ELIMINATED FROM DETAILED STUDY BY OUTPUTS AND ACTIVITIES

YEARLY OUTPUTS (units) 1/	DECADE	CEE	CEP	MKT	PRO	LBU	AMN	WLI	DDD	FFF	GGG	HHH	SJJ	KKK
Other (Except T&E)	1	49 6	49 6	49 4	49 6	40.4	40 8	45 6	46 7	47 2	45 0	47 8	47 6	47 0
(MWFUD)	2	57 9	57 9	57.6	57 9	47 5	47.5	53.0	55.5	55.5	54 1	56 5	55 6	55 0
1982 = 41 0	3	65 6	65 6	65.2	65.6	54 2	53.1	60.1	63 7	63 5	62.3	64 9	63 8	64 0
	4	72 6	72 6	72 3	72 6	60 3	59.3	66 5	71 9	71 1	70.1	73 3	72 0	74 0
	5	76 6	16 6	76.2	76 6	66 1	61 8	69 7	78 9	78 8	76 8	81 4	80 0	80 0
Fish (Except T&E)	1	7 2	7 2	7.2	7.2	5.9	6 0	6 6	6 4	6.1	7 6	4 9	5 7	7 0
(MWFUD)	2	8 4	8 4	8 4	8 4	7 0	6 9	7.7	7 6	7.2	9 2	5 8	6 8	8 0
1982 = 5 4	3	9 5	9 5	9 5	9 5	8 0	7.8	8 7	8 7	8 3	10 9	6 7	7 7	8 0
	4	10 6	10 6	10 5	10.6	8.7	8 6	9 7	9 8	9 2	12 7	7 5	8 7	9 0
	5	11 2	11 2	11 1	11 2	9.7	9 0	10 2	10.8	10 2	14 6	8.3	9.6	10 0
ANIMAL NUMBERS''														
Deer														
LOW		11,500	12,000	11,700	10,200	13,600	12,800	11,100	10,000	11,300	12,700	10,300	12,000	12,000
High		15,000	14,000	15,000	14,800	15,100	14,300	15,200	12,500	15,100	15,000	15,900	16,000	16,000
1982=13,000														
Resident Fish														
(Non T&E) 4/														
(M Pounds)														
1982 = 250-255		263	263	263	230	269	275	245	287	269	275	269	265	277
Developed Site	1	1,976	1,976	1,976	1,976	1,961	1,976	1,976	1,976	1,976	1,976	1,976	1,976	1,976
(MRVD's/Yr)	2	2,393	2,393	2,393	2,393	2,393	2,185	2,393	2,185	2,393	2,185	2,185	2,393	2,393
1982 = 1388	3	2,784	2,784	2,784	2,784	2,784	2,185	2,784	2,185	2,784	2,185	2,185	2,784	2,784
	4	3,129	3,129	3,129	3,129	2,841	2,185	3,129	2,185	3,129	2,185	2,185	3,129	3,129
	5	3,129	3,129	3,318	3,129	2,841	2,185	3,129	2,185	3,318	2,185	2,185	3,129	3,318
Ski Areas	1	292	292	292	292	292	259	292	292	292	259	259	292	292
(MRVD's/Yr)	2	379	379	379	379	379	259	379	379	379	259	259	379	379
1982 = 498	3	492	492	492	492	492	259	492	492	492	259	259	492	492
	4	639	639	639	639	639	259	639	639	639	259	259	639	639
	5	830	830	830	830	830	259	802	830	830	259	259	830	830
Wilderness Use	1	55 4	55 4	55.4	55 4	85.9	88 9	76 0	55 4	55.4	55.4	55 4	55 4	55 4
(MRVD's/Yr)	2	55 4	55 4	55 4	55.4	109 0	113 4	90 6	55 4	55 4	55 4	55 4	55 4	55 4
1982 = 0	3	55 4	55 4	55 4	55 4	139 5	146 2	113 3	55 4	55 4	55 4	55 4	55 4	55 4
	4	55 4	55 4	55 4	55 4	182 7	117.6	137 1	55 4	55 4	55.4	55 4	55 4	55 4
	5	55 4	55 4	55 4	55 4	208 2	203 1	140 8	55 4	55 4	55 4	55 4	55 4	55 4
Dispersed Recrea-	1	2,925	2,925	2,925	2,925	2,925	2,925	2,925	2,925	2,925	2,925	2,925	2,925	2,925
tion (MRVD's/Yr)	2	3,436	3,436	3,436	3,436	3,436	3,436	3,436	3,436	3,436	3,436	3,436	3,436	3,436
1982 = 2447	3	3,944	3,944	3,944	3,944	3,944	3,944	3,944	3,944	3,944	3,944	3,944	3,944	3,944
	4	4,452	4,452	4,452	4,452	4,452	4,452	4,452	4,452	4,452	4,452	4,452	4,452	4,452
	5	4,960	4,960	4,960	4,960	4,960	4,960	4,960	4,960	4,960	4,960	4,960	4,960	4,960
Clearcut Acres	1	7,623	7,600	7,347	7,342	1,210	416	6,945	5,849	2,215	1,913	4,934	5,822	4,688
(Acres/Yr)	2	4,574	4,577	4,761	4,812	1,758	559	4,102	4,864	1,545	1,347	3,615	4,340	2,582
1982 = 3,150	3	4,742	4,743	4,685	5,306	1,728	1,556	4,131	5,560	1,167	1,046	4,551	5,556	3,436
	4	4,729	4,718	4,771	5,169	1,805	2,067	4,676	3,935	1,579	1,413	2,810	3,373	2,532
	5	5,730	5,686	5,752	6,173	1,567	1,941	5,664	3,595	1,989	1,809	4,119	2,872	4,031

TABLE 2.3 - COMPARISON OF ALTERNATIVES ELIMINATED FROM DETAILED STUDY BY OUTPUTS AND ACTIVITIES

YEARLY OUTPUTS (units) 1/	DECADE	CEE	CEP	MKT	PRO	LBU	AMN	WLI	DDD	PPP	GGG	HHH	JJJ	KKK
Shelterwood														
Seed Step	1	0	0	0	0	276	1,615	0	328	18	44	300	98	1,000
(Acres/Yr)	2	1,406	1,416	2,011	2,649	0	1,243	1,918	1,104	1,060	942	597	1,018	1,000
1982 = 2,600	3	0	0	0	0	0	0	88	228	743	635	300	62	1,000
	4	571	569	536	462	1,058	0	88	302	438	312	300	301	1,000
	5	311	296	669	0	370	5	0	102	0	151	333	678	0
Commercial														
Thinning	1	11 6	11 6	11 7	11 5	7 1	6 2	11 5	8 3	4 6	3 6	7 1	7 1	6 1
(MMBF/Yr)	2	0 0	0 0	0 0	0 0	0 0	0 0	0 0	5 0	2 4	2 1	5 6	5 8	4 6
1982 = 1 2	3	6 0	6 1	6 4	6 9	8 6	1 4	4 1	16 7	1 1 1	8 7	29 8	14 6	12 0
	4	5 2	5 2	5 2	5 2	4 8	4 3	5 1	10 0	5 4	5 0	1 3 2	1 0 9	9 4
	5	17 4	17 3	17 0	12 1	4 6	0 0	16 7	3 1 2	13 9	12 4	31 5	37 2	21 8
Timber Suitable														
(Acres)		595.987	595.449	592.744	595.987	523.189	480,477	541.659	608.290	607,740	489.682	426.645	561.129	548.185
LTSY (MMBF)		261 5	261 4	260 0	261 5	226 7	142 6	364 4	255 0	172 1	146 8	204 2	233 8	214 3
LTSY (MMCF)		40 2	40 2	40 6	40 2	34.9	21 9	56 1	39.2	26 5	22.6	31 4	36 0	33.0
Wilderness														
Suitable (Acres)		18,705	18,705	18,705	18,705	133,094	130.636	90.162	18.705	18,705	18,705	18,705	18,705	18,705
Nonstructural														
Wildlife														
(Projects)		486	486	1186	486	329	486	486	504	319	382	233	283	426
Fire Program/														
Option 5/	1	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	-40/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP
	2	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	-40/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP	BAS/AKP
	3	BAS/AIR	BAS/AIR	BAS/AKP	BAS/AIR	-40/AIR	BAS/AIR	BAS/AIR	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP
	4	BAS/AIR	BAS/AIR	BAS/AKP	BAS/AIR	-40/AKP	BAS/AIR	BAS/AIR	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP
	5	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP	+20/AKP
Burned Acres														
(Acres/Yr)	1	1,055	1,055	1,051	1,051	1,756	947	1,045	1,032	960	950	1,003	1,032	1,002
1982 = 1.038	2	1,121	1,121	1,120	1,120	1,783	919	1,103	1,107	982	970	1,060	1,095	1,053
	3	1,315	1,315	1,308	1,341	2,199	1,126	1,297	928	740	724	859	915	838
	4	1,358	1,348	1,342	1,380	2,177	1,123	1,331	950	738	723	867	926	845
	5	1,061	1,062	1,061	1,108	3,747	873	1,052	1,059	875	857	942	1,027	981

1/ See the Glossary of the Plan for an explanation of terms

2/ Potential yield from standard, special, and marginal components

3/ The expected low-high range over decades 1 to 5 is based on the amount of capable-suitable habitat adjusted to reflect the biological factors

4/ The entries are total pounds of fish produced during the 5th decade Comparison with the base level (1982) will show the overall loss or gain during the 5 decades

5/ Refer to Appendix B for an explanation of fire programs

E. ALTERNATIVES CONSIDERED IN DETAIL

INTRODUCTION

This section describes the six alternatives considered in detail. The management direction common to all alternatives is summarized. The concept of management prescriptions and how they relate to management areas is explained. Finally, each alternative is presented including the theme, resource program direction, expected future condition, and tabular displays of outputs and costs. Section F of this chapter compares the alternatives and explains the differences between them.

In addition to the descriptions presented in this **EIS**, each of the alternatives is shown on 1/4-inch-per-mile maps in the Maps packet accompanying this document.

MANAGEMENT DIRECTION COMMON TO ALL ALTERNATIVES

In the process of developing alternatives, some direction common to all alternatives was necessary to meet legal requirements or to ensure that all alternatives would be implementable.

Six types of direction are common to all alternatives. (1) technological constraints, (2) minimum management requirements (MMR's), (3) timber policy requirements, (4) minimum implementation requirements (MIR's). (5) Forest constraints, and (6) summary of Forestwide policy, standards, and guidelines.

A complete discussion of the use of constraints in FORPLAN, and their effects, is found in Appendix B.

Technological Constraints. Outputs of each benchmark and alternative are estimated by simulating the behavior of the production processes on the TNF in a mathematical model, FORPLAN. To ensure that the simulation results are realistic and implementable on the ground, several relationships, termed 'technological constraints,' are built into the model.

The model limits certain management activities to certain types of land. For example, timber is not managed in campgrounds except to remove hazardous trees. Timber is not clearcut on some harsh south-facing slopes because of regeneration difficulties. Only those lands having the proper characteristics for ski areas (**slope**, snow, access, land not otherwise encumbered) are considered for ski area expansion or development as a management option. Technological constraints ensure that some commodities, such as campgrounds, are not built before needed as measured by campground demand, and they also ensure that an appropriate level of timber in each age class exists by the end of the planning horizon.

Minimum Management Requirements (MMR's) Minimum management requirements were developed from the forest planning regulations, 36 CFR 219.27, and comply with statutes and regulations. They are legal requirements outside of Forest Service authority to change. The following MMR's were applied to both benchmarks (except the unconstrained FLW benchmark) and alternatives:

- 1 Capable, Available, and Suitable (CAS) Lands Consider lands capable, available, and suitable for regulated timber production under the following conditions,
 - a The land is forested and is currently producing, or is capable of producing, crops of industrial wood (at least 20 cubic feet or more per acre per year)
 - b The land has not been withdrawn from timber production by Congress, the Secretary of Agriculture, or the Chief of the Forest Service. On the TNF withdrawn areas include the Granite Chief Wilderness, the North Fork American Wild River, and Onion Creek Experimental Forest
 - c Technology and knowledge exist, and are available, to ensure timber production without irreversible damage to soils, productivity, or watershed conditions.

- d. Existing technology and knowledge provide reasonable assurance that adequate restocking can be attained within five years after final harvest
 - e. Adequate information is available to predict responses to timber management practices.
2. **Threatened and Endangered (T&E) Species** Identify habitat critical to T&E species, and prescribe measures to prevent the destruction or adverse modification of this habitat. Provide habitat management in accordance with recovery or species management plans. On the TNF, bald eagles, peregrine falcons, and Lahontan cutthroat trout are the only identified T&E species
 3. **Viable Populations for Wildlife.** Maintain sufficient habitat to support, at a minimum, estimated numbers and distribution of reproductive individuals of all native vertebrates to ensure their continued existence.
 4. **Goshawk** Maintain sufficient suitable habitat to support at least 75 pairs.
 5. **Spotted Owls** Maintain sufficient suitable habitat to ensure continued existence of an adequate number and distribution of spotted owl pairs. Establish a network of spotted owl habitat areas (SOHA's) that conform to the spacing and distribution standards on pages 4-18 and 4-19 of the Regional Guide. Within each SOHA, provide at least 1,000 acres of suitable owl habitat in all time periods. On the TNF, the minimum SOHA network needed to comply with the Regional Planning Guide direction is 33
 6. **Diversity** Manage plant and animal communities so that diversity is similar to that currently on the Forest. Localized reductions in diversity will be allowed only when necessary to meet overall multiple use objectives. On the TNF maintain at least five percent of each major vegetation type in one of seven seral stages.
 7. **Riparian Area Protection** Emphasize protection of riparian area-dependent resources over commodity production. Where conflict exists between the two, resolve in favor of the most limiting riparian area-dependent resource.
 - a. Apply no practices or prescriptions to these areas that cause detrimental changes to water quality, aquatic flora and fauna, hydrophytic vegetation, or riparian-dependent wildlife.
 - b. Permit timber harvesting, grazing, developed recreation, and OHV's only if these uses are compatible with needs of riparian-dependent resources. Preferential consideration will be given to riparian-dependent resources when conflicts occur among land-use activities

Riparian areas are defined, as a minimum, as follows (1) areas within a 100-foot horizontal distance from the edge of standing bodies of water, (2) areas within a 100-foot horizontal distance on each side of perennial stream channels, and (3) all wetlands.
 8. **Soil and Water Productivity** Conserve soil and water resources and do not significantly or permanently impair land productivity. Limit disturbance on lands characterized by over-steepened slopes, very high erosion potential, or high instability to no more than 5 percent per decade to avoid soil loss, activation of mass failures, and degradation of water quality.

Timber Policy Requirements The following timber policy requirements are needed to ensure that timber harvest meets sustained yield, that harvest is generally at culmination of mean annual increment (CMAI), and that harvest areas are sufficiently dispersed.

1. Ensure that all even-aged stands scheduled for final harvest will have generally reached CMAI of growth
2. Provide a range of rotation ages
3. Ensure that long-term sustained yield, as defined for each alternative, is perpetuated through the end of the planning horizon

- 4 Prevent regeneration units that are still considered 'openings' from having more than 15 percent of their boundaries in common with other openings. Disperse units to leave logical harvest units between openings

Minimum Implementation Requirements (**MIR's**). Minimum implementation requirements ensure that alternatives are minimally acceptable and implementable. They embody Regional Forest Service policies beyond legal requirements. The MIR's are applied only to the alternatives and not to the benchmarks

1. Manage sensitive plant species to ensure that they do not become threatened or endangered because of Forest Service activities.
2. Employ the 'partial retention' visual quality objective in foregrounds and middlegrounds as viewed from Highways 20, 49, 80, and 89 (officially designated as, or candidates for, California State and County Scenic Highways).

Forest constraints common to all alternatives can be established to further ensure implementability at the local level. They are based on Forest (rather than Regional) conditions in addition to the MMR's. These constraints are not applied to benchmarks, but are applied to all alternatives except the Constrained Economic Efficiency (CEE) alternative. Forest constraints unique to an alternative are discussed under the alternative descriptions. The only Tahoe National Forest requirement common to all alternatives relates to Carman Valley Watershed, which has excessive channel cutting and loss of adjacent wetlands. In this watershed timber harvest is limited to unregulated harvesting in riparian areas; on all other suitable timber lands in this watershed, harvesting will be done under long rotations. These requirements are needed to reduce watershed disturbance in this area.

Summary of Forestwide Policy, Standards, and Guidelines. In addition to the above, the TNF has developed Forestwide policies, standards, and guidelines common to all alternatives (1) to ensure the efficient management of Forest resources, (2) to establish baseline conditions that must be maintained, (3) to guide implementation of any project on the Forest, and (4) to facilitate an integrated approach to resource management. (See Chapter V of the accompanying Forest Plan for the complete set of Forestwide policies, standards, and guidelines common to all alternatives and those practices unique to the preferred alternative.) Those standards that vary by alternative are discussed in each alternative description later in this chapter. The following summarizes those that apply to all alternatives.

1. Economics. Achieve economic efficiency as directed by NFMA.
2. Social. Continue with the Human Resource Programs and with Occupational Safety and Health Administration. Continue to coordinate such programs with other Federal, State, and local agencies and maintain special coordination for urban and community programs, such as coordinated resources management planning and resource conservation and development area projects.
3. Air Quality. Adjust burning programs and other Forest activities as needed so that Federal, State, and local air pollutant standards are not violated.
4. Energy. Ensure energy-efficient land management practices on the TNF, to the degree practicable.
5. Facilities. Continue to maintain National Forest System administrative (including radio installation) and residential facilities for use by National Forest personnel, as required by Forest Service policy. Level I - Health and Safety, and Level II - Protect Government Investment. Ongoing feasibility and organizational studies could identify additional investments (minimum and maximum building investment levels) for new facilities.

Manage the TNF trail system to protect the resources and the health and safety of users while maintaining and developing the system to meet demand for dispersed recreation uses.

Provide roads necessary to meet adopted management goals.

Eliminate and obliterate unneeded routes

Restrict road, trail, and off-highway use as necessary to protect threatened, endangered, and sensitive plants or animals, essential wildlife functions, cultural resources, and riparian areas and wetlands.

- 6 Fire and Fuels Stress fast, energetic, thorough, and safe attack on wildland fires in combination with an aggressive, efficient fuels management program. This emphasis is clarified further by the following fire management objectives.
 - a. Provide a balanced fire management program that is cost efficient and commensurate with threats to life and property, public safety, hazards, risks, and resource values and objectives.
 - b. Use prescribed fire to protect, maintain, enhance, and attain the production and quality of TNF resources.
 - c. Provide data, information, and coordination for full integration of fire use and protection in the analysis, formulation, and evaluation of alternative land management prescriptions, goals, and objectives.
 - d. Work with State and local cooperators to achieve these objectives.
- 7 Fish and Wildlife. Provide habitat leading to viable populations of threatened and endangered species. Manage for three pairs of peregrine falcon into areas having suitable nesting habitat. Construct nesting platforms and manipulate vegetation to enhance bald eagle nesting habitat in suitable areas.
- 8 Forest Pests. The principles of integrated pest management (IPM) described by Forest Service policy direct pest management programs. This Forestwide IPM program is to protect forest, recreation, and range resources against unacceptable losses from destructive forest pests by using no methods that will damage the quality of the environment. Forestwide, emphasize IPM using a full range of pest management activities. The Forestwide policy of IPM does not require or exclude a specific method, such as pesticide use.

The IPM direction was discussed in detail in the February 1989 Pacific Southwest Region Final Environmental Impact Statement. Vegetation Management for Reforestation. This FEIS included detailed discussions and analyses of a preferred alternative, alternatives to the preferred (including no vegetation management, no application of herbicides, and no aerial application of herbicides), and the consequences of these alternatives on the environment. Based on the selected alternative in the Vegetation Management FEIS, all alternatives, except the Nonmarket Alternative (NMK), in this Forest Plan EIS are predicated on the use of the full range of alternative treatment methods including mechanical, prescribed fire, biological, and chemical methods (with limitations).

The Regional Vegetation Management for Reforestation FEIS is hereby incorporated by reference. The FEIS was approved February 27, 1989. The proposed Forest Plan (Chapter V) directs that the selection of any particular treatment method will be made at the project level based on a site-specific analysis of the relative effectiveness, environmental effects, and costs of the feasible alternatives, and that herbicides will be selected only if (a) their use is essential to meet management objectives and (b) monitoring and enforcement plans to implement specific measures will be developed for site-specific projects and described in the environmental analyses for these projects.

The effects of not allowing the use of herbicides by LMP alternative are summarized in Table 2.4. The NMK alternative is not displayed because herbicides would not be used under this alternative. These changes are projected from data from the Region's computer model of vegetation management costs and yields adapted to this Forest's specific situation and to the Forest Plan alternatives presented in this EIS. See the planning records for detailed information about the changes from the Regional model, and Appendix M, Effect of Herbicide Constraints on Timber Management.

TABLE 2.4 - THE EFFECT OF VARIOUS HERBICIDE USE POLICIES ON LMP ALTERNATIVES - INTENSIVELY MANAGED LANDS ONLY 1/

EFFECT	HERBICIDE POLICY 2/	PRF	CUR	RPA	CMD	UNE	EFFECT DIFFERENCE BY HERBICIDE POLICY
Average annual 3/ ASQ - MMBF	Recommended alternative	123 5	145 5	150 9	166 0	112 6	--
	No herbicide, unlimited \$	102 8	116 4	120 7	132 8	90 9	-20%
	No herbicide, limited \$	92 2	104 4	108 2	119 0	80 8	-28%
	No aerial herbicide	116 1	131 5	136 3	150 0	101 7	-10%
Landbase 4/ for intensive management M Acres	Recommended alternative	372	458	459	453		
	No herbicide, unlimited \$	300	369	370	365		
	No herbicide, limited \$	252	310	311	307		-32%
	No aerial herbicide	333	410	411	406		-11%
Annual cost 5/ (MM\$)	Recommended alternative	2 96	334	3 47	3 82	2 59	--
	No herbicide, unlimited \$	3 60	4 07	4 22	4 65	3 15	+21%
	No herbicide, limited \$	286	3 24	335	369	2 50	--
	No aerial herbicide	290	329	3 41	3 75	254	-1%
Average cost per MBF (\$) 6/	Recommended alternative	23	23	23	23	23	--
	No herbicide, unlimited \$	35	35	35	35	35	+52%
	No herbicide, limited \$	31	31	31	31	31	+35%
	No aerial herbicide	25	25	25	25	25	+9%

1/ Alternatives are R-5 "Vegetative" Alternative (PRF).

2/ Alternatives that assume herbicide use. See Appendix M for a discussion of the Nonmarket (NMK) alternative.

3/ Long-term sustainable yield for indicated landbase. Volume from nonintensively managed lands (TM-marginal) not included.

4/ Intensively managed lands only. Regulation Class I (TM-FULL) and Regulation Class II (TM-REDUCED).

5/ Includes all reforestation and timber stand improvement costs, except animal damage control.

6/ Average cost of reforestation and TSI per thousand board feet of timber produced on a sustained, long-term basis.

9 Geology. Complete the Forest Geologic Resources (and hazards) Inventory and use it to make preliminary assessments of impacts and needed mitigations on land-disturbing activities and to identify and analyze potential geologic resources. Conduct project-specific geologic and/or geotechnical investigations on projects that have the potential to initiate or accelerate slope movements, be adversely affected by fault zones, or impact groundwater quality or quantity.

10. Historical and Cultural Resources Identify cultural resources as a part of the environmental analysis of specific Forest projects. Identify and evaluate cultural resources for significance. Monitor cultural resource protection measures designed for specific projects.

Manage those cultural resources on, or eligible for inclusion on, the National Register of Historic Places and those which have not been evaluated to preserve their historic, scientific, or social values. When planning for public interpretation of cultural resources, emphasize those resources that are on the National Register of Historic Places, those that are located near recreation developments, and those that best represent significant historical events, processes, and places.

Coordinate cultural resource activities with the State Historic Preservation Officer, the Advisory Council on Historic Preservation, and interested public groups.

11 Land Adjustments Acquire private land in areas existing or recommended for Wilderness, Wild and Scenic Rivers, Research Natural Areas, and Special Interest Areas as necessary to protect the area for the specific purpose for which it was designated

12 Land Line Surveys. Eliminate the 2,450 mile land line (TNF property boundaries) backlog by the year 2020 as described in the 1980 RPA Program.

Locate and establish TNF property boundaries as necessary to protect resources and minimize conflict with adjacent owners.

13. Special Uses. Manage Ward, Boreal Ridge, Cisco Butte, Galloway, Harding, Ruby, Squaw Peak, Pass, and Idaas electronic sites Generally, do not issue special-use permits for electronic uses without preparing an environmental analysis (Exceptions include base station communication radios for special-use permit holders) Continue under special-use permit the Sagehen Station, Martis, and Hirschdale areas.

Designate, in all action alternatives, the Donner Pass area as an existing corridor.

Consider new special uses or easements only when suitable private land is not available and such use does not conflict with management objectives. Consolidate uses as much as possible

Acquire road and trail rights-of-way for facilities needed for the Forest transportation system

14. Withdrawal from Mineral Entry and Leasing To protect areas for specific management objectives, propose withdrawing from mineral entry and leasing the Babbitt Peak Research Natural Area Propose mineral withdrawal of those portions of Elliot Ranch, the Foresthill Seed Orchard, existing developed recreation sites, and Onion Creek Experimental Forest not already withdrawn The 68,100 acres of existing and previously proposed withdrawals will be reduced by about 2,000 acres if the BLM approves our recommendations in the current withdrawal review process. The Granite Chief Wilderness is withdrawn from all forms of mineral entry and leasing.

15. Law Enforcement. Comply with laws and regulations: protect the public and its property; protect Forest Service employees; and protect the Forest resources and property

The visitor, whenever possible, should have an enjoyable experience. Therefore, prevention of criminal violations will be given first priority Aggressive action also will be taken to discover and investigate violations of laws.

The TNF will continue cooperative law enforcement agreements with State and local authorities. Forest officers also will cooperate with and aid State, local, and Federal agencies to execute their agency responsibilities

All employees are responsible for initiating appropriate action when they become aware of violations. Appropriate action is dependent on the level of law enforcement training completed by the individual employee. Law enforcement activity under all alternatives will require additional numbers of employees qualified as criminal investigators, law enforcement officers, or Level IV Forest officers

16 Minerals. Process notices of intent, plans of operation, and responses to requests for prospecting permits and mineral leases with special emphasis for requests involving energy minerals.

Impose reasonable conditions in mineral extraction plans of operation to protect surface resources and to reclaim disturbed areas consistent with the statutory rights of claimants, leaseholders, and permittees.

- 17 Range Protect, use, and improve both permanent and transitory range for livestock grazing.
- Continue the Federal cooperative predator control program to protect livestock
- Allocate forage to wildlife to satisfy wildlife policies.
- Improve ranges and implement grazing systems to protect riparian areas.
- In the Granite Chief Wilderness, implement only extensive grazing systems to maintain forage production while maintaining the wilderness attributes.
- 18 Recreation. Continue to manage existing **sites** for developed recreation. Charge fees where allowed by law.
- Favor OHV trail development over indiscriminate cross-country use
- 19 Research. Continue to manage Onion Creek Experimental Forest, Foresthill Tree Improvement Center, and Elliott Ranch as research areas.
20. Cooperative Studies. Manage the Sagehen Basin to provide for cooperative studies that emphasize wildlife, timber management, and other multiple use relationships between the University of California at Berkeley and the TNF.
21. Riparian. Maintain the riparian habitat and an effective filtration strip adjacent to streamcourses and lakes
- Maintain perennial stream temperatures by limiting removal of shade-casting vegetation.
- Off-highway use will be eliminated except on designated routes and stream crossings.
22. Sensitive Plants. Plan vegetation management practices to protect or enhance sensitive plant species.
23. **Silvicultural** Systems. The PSW Regional Guide established five criteria for selection of silvicultural systems to meet long-term resource management objectives. Appendix I compares even-age and uneven-age management on the TNF with criteria described in the Regional Guide.
24. **Soils** As determined through project analysis, improve soil productivity on forest land currently significantly altered
25. Timber. Progress toward a regulated Forest condition by emphasizing regeneration of stands using clearcutting and shelterwood cutting
- Schedule regeneration harvests when stands have generally reached culmination of mean annual increment, and disperse harvest openings.
- Consider use of all logging systems, and base selection on silvicultural needs, resource protection, feasibility, and costs
- Continue to implement the TNF's genetic tree improvement program following the PSW Regional Tree Improvement Master Plan
- Eliminate all existing reforestation needs within 5 years as funding becomes available
- Reforest all newly created openings within 5 years of final regeneration cutting.
- Eliminate timber stand improvement (release, thinning, or both) needs for identified young conifer stands within the first decade.

26. Water. Maintain water quality where it meets or exceeds State objectives. Strive to improve water quality where it is below State objectives

Protect established snow courses and related hydrometeorological data sites from disturbances that will affect snow accumulation or measurement.

Implement Best Management Practices (BMPs) to meet water quality objectives and to maintain and improve the quality of surface water on the Forest. Methods and techniques for applying the BMPs will be identified during project-level environmental analyses and incorporated into the associated project plan and implementation documents. (See Plan Appendix E.)

Reduce sediment from treatable but deteriorating lands

Limn intensive management on about **11,500** acres identified in a declining hydrologic condition. Allow this land to recover naturally.

In all alternatives, protect and restore the deteriorating Carman Valley Watershed

27. Wild, Scenic, and Recreation **Rivers**. Continue to manage the **5,788** acre North Fork American Wild River as designated by Congress. These acres have been withdrawn from timber production and mineral appropriation.

28. Wilderness Manage the Granne Chief area as wilderness.

MANAGEMENT PRESCRIPTIONS AND MANAGEMENT AREAS

A management prescription is a grouping of similar and compatible practices, all of which have the same management emphasis. Fifteen management prescriptions (emphases) are used on the Tahoe National Forest. Within one management emphasis, a range of management intensities is possible. For example, all the water-oriented recreation activities are grouped under management prescription 4. Similarly, the emphasis of management prescription 15 is 'to manage for a predominantly natural-appearing landscape and late successional wildlife habitat'; within this emphasis, however, a full range of timber management practices (intensities) is allowed.

A management area is a geographically distinct area managed under one management prescription (emphasis). Several areas on the Forest may be assigned the same management prescription, but if they are physically separate units, they are different management areas. Likewise, though several management areas may have the same prescription, the intensity of the practices may vary between the areas. The number of management areas will vary by alternative (depending on the prescriptions assigned). Under the preferred alternative, there are **106** management areas (see the Forest Plan, Chapter V, for examples of management area direction)

The alternatives in this **EIS** vary by theme and management emphasis to attain certain multiple use, or other, goals and objectives. Only one management prescription was assigned to a management area in each alternative; some management prescriptions may not apply in a particular alternative.

In addition to the descriptions contained in the next subsection of this EIS, each of the alternatives is shown on a map contained in the Maps packet that accompanies this document. The maps show the spatial distribution of the management prescriptions selected for each alternative. The acres by management prescription assignment are summarized by alternative in Table 2.11 later in this chapter.

Management prescriptions apply only to existing National Forest System land. Land acquired after January 31, 1984, will be managed in accordance with the management prescriptions for the area within which they occur.

Each management prescription's theme and objectives is summarized below

- 1 Theme The theme is to manage the designated Granite Chief area as wilderness. Manage for dispersed recreation. Manage grazing under extensive use This land is unsuited for timber production.
- Objective Recreation and scenic values will be emphasized. Road access to trailheads for this area will be provided, transportation within this area will be restricted to nonmotorized travel. Some of the specific objectives include the following.
- a. Primitive recreation opportunities will be abundant.
 - b. **No** recreation facilities will be available.
 - c. Trails will be constructed throughout the area and no motorized travel will be permitted.
 - d. The VQO will be to maintain a pristine environment.
 - e. **No** direct fish and wildlife habitat improvement will occur, but there will be indirect management for the maintenance of existing species.
 - f. Range will be extensively managed for grazing of domestic livestock.
 - g. Timber will not be harvested or managed.
 - h. The area will be withdrawn from entry under the mining laws; however, operations on existing valid claims can continue
- 2 Theme. The theme is to retain a near-natural appearing forest environment while also producing some forage and water. Manage for dispersed nonmotorized recreation. Grazing is permitted. Low standard roads may be developed for hawesting, but are closed to public vehicle use Land is unsuited for regulated timber production
- Objective Scenic and recreation values will be emphasized. A limited transportation system may be developed. Forest resources will be managed to achieve a range of multiple use objectives and outputs. **Some** of the specific objectives include the following
- a. Modification of vegetation and landforms will not be visually evident.
 - b. Recreation opportunities will be provided in a near-natural environment.
 - c. No motorized recreation use will be permitted
 - d. Wildlife habitat will be managed to emphasize species that require late successional stages.
 - e. Fish habitat will be maintained.
 - f. Timber will be managed on an unregulated basis with **some** salvage and sanitation harvesting.
 - g. Range will be extensively managed for domestic livestock.
 - h. Mineral exploration will generally be permitted.

- 3 Theme. The theme is to produce a moderate level of commodities while enhancing or emphasizing other selected resources. Manage for dispersed motorized recreation.

Allow regulated timber harvesting, subject to visual and recreation constraints and maintenance of stand production. Range will be extensively managed. Roads are developed to serve timber harvesting.

Objective. Limited quantities of timber, forage, and water will be produced, recreation and scenic values will be emphasized. A good transportation system will be developed for these areas, including both roads and trails. Forest resources will be managed to achieve a range of multiple use objectives and outputs. Some of the specific objectives include the following:

- a. Recreation opportunities will be provided where there is some modification to the natural environment.
- b. Off-highway vehicles will be permitted on designated routes only.
- c. Modification of the vegetation and landform will be visually subordinate to the landscape.
- d. Wildlife habitat will be managed to emphasize species requiring early and midsuccessional vegetative stages.
- e. Direct improvements to enhance fishery habitat will be used to increase fish numbers.
- f. Timber will be managed to achieve a low level of production using special cutting practices, salvage, and some sanitation harvesting.
- g. Range will be extensively managed for livestock.
- h. Mineral exploration will generally be permitted.

- 4 Theme. The theme is to provide water-oriented recreational opportunities. Manage for developed recreation use around reservoirs and lakes. Maintain and upgrade developed facilities. Maintain visual quality background for the recreation users. Allow vegetative management, including regulated timber harvest, only when compatible with recreation and visual objectives and maintenance of stand vigor. Provide interpretive services and facilities where appropriate.

Objective. Developed sites with many facilities, including water, toilets, tables, fire rings, boat ramps, etc., will be provided within these areas. Good road access will be provided. Forest resources will be managed for developed recreation objectives and outputs. Some of the specific objectives include the following:

- a. Developed recreation facilities will be provided
- b. Off-highway vehicles will be restricted to designated routes.
- c. Modification of the vegetation and landform for recreation facilities will be visually evident, but vegetation disturbance will be minimized.
- d. Some wildlife will occupy these areas (i.e., squirrel, quail, deer, etc.), but habitat effectiveness will be limited because of human disturbance.
- e. Direct improvements to enhance fishery habitats will be used to increase fish numbers.
- f. Timber will be harvested on a regulated basis using special cutting practices such as the salvage of dead, diseased, or hazardous trees.

- g Range will be extensively managed for domestic **livestock**.
- h A large portion of these areas has been withdrawn from mineral entry to protect the reservoirs and recreation developments. Continued protection of these facilities during the FLPMA review process will be considered.

5 Theme. The theme is to establish representative vegetation and geologic areas for scientific and educational research. Manage for research and special interest purposes. Also establish SIA's to protect special or unique geologic, ecologic, or cultural features. Other uses permitted when not in conflict with research or protection objectives. Timber harvest would be unregulated

RNA Objective. Some of these areas will be components of the Research Natural Area system. These are to be located in the **best** representative vegetation type and will be maintained in a natural state, allowing natural vegetation succession to occur. Modification of the environment will be very limited

- a. There will **be** few roads or trails.
- b. Recreation opportunities will be consistent with research natural area objectives. Recreational use will be discouraged.
- c. **The** area is unsuited for regulated timber harvest. Domestic livestock grazing will be permitted when needed to perpetuate the desired vegetation in the RNA.
- d. Motorized vehicle use will be **prohibited**.
- e. These areas will be proposed for mineral withdrawal

SIA Objective. Some of the areas will be special interest areas where special or unique geologic, ecologic, or cultural features are located and will be managed for their special values and public appreciation. Modification of the environment will be limited.

- a. There will be few roads. Trails will **be** developed appropriate for public enjoyment of special features.
- b. Recreation opportunities will be consistent with special interest area purposes. Recreation use will be encouraged as long as use is consistent with special interest values.
- c. Timber harvesting and domestic livestock grazing will be permitted if SIA objectives can be met.
- d. Motorized vehicle use will be **prohibited or** limited, depending on resource needs.
- e. These areas will be proposed for mineral withdrawal.

6 Theme. The theme is to manage as a classified Wild River, in accordance with the North Fork American Wild River Management Plan and as stated in Section 10(a) of the Wild and Scenic River Act of 1968. The fisheries will be managed as stated in the Cooperative Habitat Management Plan for the river. These lands are unavailable for forage and timber production and have been withdrawn from mineral appropriation since 1975.

Objective. Section 10(a) of the Act states as follows

'Each component of the National Wild and Scenic Rivers system shall be administered in such a manner **as** to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its aesthetic, scenic, historic, archaeological, and scientific features. Management plans for any such

component may establish varying degrees of intensity for its protection and development, based on the special attributes of the Area."

- 7 Theme. The theme is to improve fish and wildlife harvest species habitat while producing other commodities. Allow grazing if not conflicting with wildlife. Restrict transportation use to meet wildlife objectives. Harvest timber on a regulated basis.

Objective. Waterfowl and deer habitat values will be emphasized. Limited quantities of timber and forage will be produced. A limited transportation system will be developed for these areas. Forest resources will be managed to achieve a range of multiple use objectives and outputs. Some of the specific objectives include the following:

- a. Wildlife-oriented recreation opportunities will be enhanced.
- b. Wildlife habitat will be managed so that improvement for deer and waterfowl will be emphasized and other species, including fish, will be maintained.
- c. Off-highway vehicles will be restricted, including both roads and trails
- d. Timber will be managed for a moderate level of production using a wide range of silvicultural methods
- e. Range will be extensively managed for domestic livestock subordinate to wildlife objectives
- f. Mineral exploration will generally be permitted

- 8 Theme. The theme is to retain a natural-appearing forest environment while also producing some timber, forage, and water. Manage for visual attractiveness as viewed from major travel routes. Allow uses compatible with adopted visual quality objectives. Provide interpretive services and facilities where appropriate. Allow regulated timber harvest.

Objective. Scenic and recreation values will be emphasized. A transportation system will be developed, including both roads and trails. Forest resources will be managed to achieve a range of multiple use objectives and outputs. Some of the specific objectives include the following:

- a. Modification to the vegetation and landform will not be visually apparent.
- b. Recreation opportunities will be provided in a natural environment
- c. Off-highway vehicles will be restricted.
- d. Wildlife habitat will be managed to emphasize the indicator species associated with late successional vegetation
- e. Fishery habitat will be maintained.
- f. Timber will be managed at a low level of production through application of some regeneration, salvage, and sanitation harvesting
- g. Range will be extensively managed for domestic livestock.
- h. A portion of the area is withdrawn from mineral entry
- i. Additional withdrawals will be proposed to protect valuable improvements or resources

- 9 Theme. The theme is to maintain watershed integrity. Manage for watershed protection and improvement. Allow other resource uses when compatible with water quality objectives. Provide no

new developed recreation facilities. Stabilize those roads which contribute to watershed degradation. Restrict off-highway vehicle uses. Allow regulated timber harvest.

Objective. Streamside management zones (SMZ's) are unsuited for timber production. Other lands will be managed for a moderate level of timber production. Some of the specific objectives include the following:

- a. Forage will be intensively managed for livestock production
- b. Waterfowl and deer habitat will be enhanced
- c. Watershed restoration will be emphasized
- d. Mineral exploration will generally be permitted.

10 Theme. The theme is to maintain land and resource values necessary to retain a high value for exchange. The land is unsuited for regulated timber production.

Objective. Forest resources will be managed to achieve limited multiple use objectives and outputs. These lands are available for exchange. Some of the specific objectives include the following:

- a. Dispersed recreation opportunities and off-highway vehicle use will be permitted.
- b. Fish and wildlife habitat will be managed for species presently occupying the sites, but no direct improvements will be done
- c. Modifications of the vegetation and landform will not be visually evident.
- d. Extensive range management for domestic livestock will be practiced
- e. Timber may be harvested on an unregulated basis for salvage or sanitation of dead, diseased, or hazardous trees.
- f. Cultural resource inventory evaluation and mitigation will be high priority.

11 Theme The theme is to provide winter recreation opportunities. Manage for Nordic and alpine ski potential with other compatible uses. Timber harvest would be unregulated on most areas.

Objective. Facilities, including water, toilets, ski lodges, ski runs, parking areas, etc., may be provided within most of these areas. Year-round road access to the developed sites will be available. Forest resources will be managed for developed alpine and Nordic ski recreation objectives. Some of the specific objectives include the following:

- a. Developed ski facilities will be provided.
- b. Facilities and vegetative disturbance will usually be visually evident.
- c. Some wildlife will occupy these areas, but wildlife habitat management will not be emphasized.
- d. Fishery habitats will be maintained.
- e. Timber may be harvested in the unregulated areas (alpine) for salvage and sanitation of dead, diseased, or hazardous trees: on the Nordic areas, timber harvesting will include a wide range of practices.
- f. Grazing will be permitted under extensive management.
- g. Mineral exploration will generally be permitted.

- 12 Theme. The theme is to emphasize land uses for facilities such as pipelines, transmission lines, and administrative sites. Manage for primary use as allowed under special-use permit and administrative uses. Other compatible uses allowed. Timber harvest would be unregulated.

Objective. Some specific objectives of these developed sites, which have many facilities, include the following:

- a. Ensure the safe maintenance of pipelines, powerlines, buildings, fences, electronic transmission equipment (antennas, generators, etc.), roads, and other transportation facilities
- b. Modification of the vegetation will usually be evident
- c. Some wildlife will be present, however, they will be limited because of human disturbance.
- d. All areas will have road access.
- e. Recreation use will not be encouraged
- f. Timber harvesting, livestock grazing, and off-highway vehicle use will be restricted.
- g. Mineral exploration may be permitted.

- 13 Theme. The theme is to intensively manage timber and forage resources. Emphasize regulated timber production utilizing even-age or uneven-age silvicultural systems on available, capable, and suitable lands. Grazing would be managed under both intensive and extensive systems.

Objective. Timber, forage, and water will be intensively managed. A transportation network will be developed for these areas, specifically, roads for timber and range management access. Some of the specific objectives include the following:

- a. Timber will be managed for maximum economically efficient production using a full range of silvicultural methods.
- b. Perennial range will be intensively managed for forage production; transitional range will be extensively managed.
- c. Recreation opportunities requiring a roaded, natural-appearing environment will be enhanced, and off-highway vehicle use will be permitted
- d. Geothermal and mineral exploration will be permitted.
- e. Wildlife habitat will be managed to emphasize maintenance or improvement for species requiring early or mid-successional stages.
- f. Direct improvements to enhance fishery habitat will be used to manage fish numbers.
- g. Modification of vegetation and landform will be apparent.

- 14 Theme. The theme is to provide areas for cooperative studies emphasizing wildlife and timber resource management relationships. Manage for fish and wildlife cooperative research and a regulated flow of timber products. Maintain the existing water quality and flow needs for aquatic ecosystem research

Objective A moderate level of timber and forage will be produced Recreation in a near-natural environment will be enhanced because of the vegetation variety, scenic quality, and natural features. Generally, adjacent areas have good road access to these management areas, and many have trail access through them. Some of the specific objectives include the following.

- a. Habitat will be managed for a variety of wildlife and fish species selected for the cooperative research objectives.
- b. Off-highway vehicle use will generally be restricted.
- c. Ranges will be intensively and extensively managed for domestic livestock and grazing
- d. The areas will be open to geothermal leasing and mineral entry.

- 15 Theme The theme is to manage for a predominantly natural-appearing landscape and late successional wildlife habitat, using a full range of timber management practices

Objective Moderate quantities of timber, forage, and water will be produced; recreation and scenic values will be emphasized A moderate transportation system will be developed. Forest resources will be managed to achieve a range of multiple use Objectives. Some of the specific objectives include the following:

- a. Timber will be intensively managed to achieve a predominantly natural-appearing landscape and late successional wildlife habitat.
- b. Long rotation even-age management using a full range of silvicultural methods will be implemented
- c. Modification of the vegetation and landform will remain visually subordinate or unnoticed by major travel route observers.
- d. Perennial range will be intensively managed for forage production. Transitory range will be extensively managed.
- e. Recreation opportunities requiring a roaded, natural-appearing environment will be enhanced.
- f. Off-highway vehicle use will be permitted
- g. An intensive trail system will be developed to enhance dispersed recreation.
- h. Wildlife habitat will be managed to emphasize maintenance or improvement for species requiring late successional vegetation
- i. Fishery habitat will be maintained
- j. Geothermal and mineral exploration will be permitted

INDIVIDUAL ALTERNATIVE DESCRIPTIONS

Six of the alternatives formulated were selected for detailed analysis to address the specific issues or concerns and the requirements of laws, regulations, or policies. The alternatives differ from each other in their themes, the amount of commodity and activity production targets, the environmental effects resulting from implementation (Chapter 4), and in the total acres and land allocated to a management prescription (see Table 2.11 - Acres by Management Prescription by Alternative, and the alternative maps in the map packet). More detailed information on the alternatives, such as resource outputs, costs, environmental effects, and acres allocated to specific management areas and prescriptions, is displayed in the next Section F, Comparison of Alternatives.

For each alternative described in this section, the following information is presented

Theme

This describes what would be achieved through management of the Forest. Included is the philosophy or management emphasis distinguishing it from other alternatives. Specific issues, concerns, and opportunities that are emphasized are also displayed. The theme guided the development of the FORPLAN assumptions. (See Table 2.21 - Comparison of Alternatives by Major TNF Issues, Concerns, and Opportunities - for specific discussions of the issues.)

Resource Program Direction

This describes the resource program emphasis that would be implemented and any direction unique to the alternative.

The Environment to be Created

This describes what the Forest would look like in the year 2030 if the alternative were implemented totally.

Average Annual Outputs by Decade

Average annual resource outputs for each alternative are displayed for the next 5 decades. Each alternative described in detail has a schedule of resource outputs for 16 decades (planning horizon) which is documented in the planning records. Timber harvest was examined for another 11 decades beyond the fifth to ensure the nondeclining yield of wood fiber production as required by NFMA regulations.

ALTERNATIVE PRF (Preferred)

1. Theme

Achieve a broad range of commodity and amenity benefits that meet short-term needs while retaining long-range management options.

Emphasize a mixture of commodity production and amenity benefits that maximizes net public benefits while responding to the planning issues.

Specific issues emphasized are (#6) forage, wood, and soils; (#8) recreation, and (#9) fish and wildlife habitat

2. Resource Program Direction

- a. Recreation. Provide a program of developed (including downhill skiing) and dispersed recreation which would meet projected demand by expanding existing facilities before developing new facilities. Expand visitor information service and interpretive facilities and programs.

Manage land surrounding major reservoirs for water-oriented recreation. Manage Grouse Lakes as a motor vehicle closure area.

Expand opportunities for the private sector to operate campgrounds under special-use permit. Develop and manage at full standard the following potential recreation sites: Boca, Prosser, Stampede, French Meadows, Jackson Meadow, Sugar Pine, and Bullards Bar Reservoirs; Truckee and North Yuba Rivers areas, Sierra Buttes; and Interstate Highway 80 area. All other potential recreation sites would be available for other multiple uses during the first decade.

Provide 67,500 acres of SPM and 74,000 acres of SPNM ROS-class recreation opportunities.

Develop trail systems to accommodate motorized and nonmotorized recreation use, including use by the disabled. Provide designated routes for off-highway vehicle use in dispersed recreation areas.

Provide for cultural resource interpretation when planning for recreation facilities.

Manage for visual quality objectives (VQO's) of retention and partial retention along most major recreation roads and trails and around major recreation areas. Outside of the more visually sensitive areas, establish visual quality direction which would be compatible with the use of the timber resource. Emphasize visual qualities along major access roads, the North Fork American Wild River, the Granite Chief Wilderness, and in concentrated recreation use areas.

- b. Research Natural Areas. Recommend to the Chief the establishment of Babbitt Peak (1,061 acres), Lyon Peak/Needle Lake (700 acres), and Sugar Pine Point (625 acres) as RNA's.
- c. Special Interest Areas. The following SIA's are established: Placer County Big Tree Grove (346 acres), Devils Postpile (69 acres), Glacier Meadow (84 acres), Grouse Falls (220 acres), Sagehen Headwaters (79 acres), Meadow Lake (58 acres), and Mason Fen (30 acres). These areas would be designated by the Regional Forester.
- d. Wilderness. Manage Granite Chief as wilderness (18,705 acres).
- e. Fish and Wildlife. Use the species recovery and management plans as guides for managing Federal threatened and endangered species. Manage a network of 33 spotted owl habitat management areas. Maintain viable populations of all local fish and wildlife species. Give

additional attention to Forest Service sensitive species, State-listed threatened and endangered species, harvest species, State 'Species of Special Concern', and species groups associated with important wildlife habitats

- f. **Forest Pests.** Implement a high level of integrated pest management over a moderate forested acreage suitable for timber production
- g. **Range.** On about 75 percent of the capable, available, and suitable permanent range, implement range improvement practices such as seeding, fencing, and water developments to facilitate improved grazing systems such as deferred grazing and rest rotation. On the transitory range, implement vegetative management practices in harmony with other resource objectives and needs on the existing and potential forage created by timber management practices, both inside and outside of existing allotments, by developing new and improved grazing systems and techniques. Study range management practices on low-site eastside pine lands that would improve vegetation condition and maintain site productivity in a dual-use management setting.
- h. **Timber.** Apply intensive timber management practices to forest lands scheduled for high timber yields. On all lands capable, available, and suitable for timber production, obtain timber yields while maintaining other resource values. Timber yield calculations are based upon the nondeclining even-flow timber policy. The even-age silvicultural system would be the principal method for regulating lands suitable for timber production. Apply uneven-age management in five selected compartments to obtain information on the operational needs of a large-scale uneven-age management program.
- i. **Water and Soil.** Maintain water quality at existing levels. Restore water quality on 1,900 acres of stream channels, meadows, roads, old wildfire areas, and priority hydraulic diggings
- j. **Minerals.** The Granite Chief Wilderness is withdrawn from all forms of mineral entry and leasing. Propose withdrawing from mineral entry the RNA's and SIA's, areas of concentrated public use (including potential recreation sites), areas along portions of designated or eligible State scenic highways not previously withdrawn (200 feet from the centerline along Highways 20, and 89 and approximately 400 feet on each side of Interstate 80), and areas 200 feet from the centerline of the Gold Lake Highway
- k. **Land Ownership and Special Uses.** Acquire private land within the Granite Chief Wilderness. Use selected National Forest System lands to acquire other lands which would enhance Tahoe National Forest management

Designate and manage the Donner Pass area as a utility corridor and designate the Galloway site as an electronic site. The Granite Chief Wilderness, North Fork American Wild River, Special Interest and Research Natural Areas are excluded from consideration for utility corridors.
- l. **Facilities.** Construct and maintain roads to access areas suitable for resource management. Maintain facilities at building investment level III; provide for improvement and replacement of existing facilities.
- m. **Fire Management.** Emphasize all small engines and hand crews. Continue fuel treatment at present or greater levels using both engine and hand crews. The specific program organization would consist of the following:
 - o Prevention and detection (40 percent)
 - o Suppression, including fuels management (60 percent).
- n. **Riparian/SMZ.** Apply the Forest requirement (S&G's 46 and 47 and Appendix F) for riparian areas/SMZ's. Timber harvest scheduled from variable width SMZ's (minimum of 100 feet) along perennial streams would be minimal. Scheduled timber yields are also reduced within

variable width **SMZ's** adjacent to intermittent streams where needed to protect channels and water quality.

- o.** Diversity. Provide a minimum of **15** snags per acre in each eastside planning **compartment**. Establish a goal of **20** snags/acre for westside compartments. Also provide a minimum of **30 sq. ft** basal area per acre in hardwood/conifer mix (**3X** and **4X**) and **5 sq. ft** per acre in mixed-conifer stands.

3. The Environment to be Created

Timber harvesting, reforestation, timber stand improvement, range practices, and wildlife habitat improvement would produce a forest of greater diversity than currently exists.

The major change in vegetation by the year **2030** would be the replacement of a portion of the existing timber stands by even-age young growth conifer stands. This alternative would have about **186,940** acres, or **27** percent of the existing forested land, of new timber stands less than **50** years old. The understory vegetation in these plantations would feature a combination of light densities of brush intermingled with small amounts of slash and natural fuels.

About **233,200** acres would be managed for timber on a short rotation (**50-120** years). This timber management approach would result in a mosaic of similar sized, even-aged timber stands that differ by 10-year age classes. The larger trees would be 18 to 27 inches in diameter. The ground fuels would be scattered brush and light slash. This forested pattern would exist in areas of intensive timber management to create and maintain a regulated forest.

Long rotation (**150+** years) even-aged timber management would be applied to about **126,900** acres. Long rotations are necessary to meet the partial retention **VQO's**. This timber management approach would result in a mosaic of even-aged timber stands. The larger trees would be **30** to 40 inches in diameter. The ground fuels would be an accumulation of moderate slash and natural fuels with patches of mature brush. This forested pattern would exist in areas emphasizing late successional wildlife habitats and scenic quality. This forested pattern would also be intermixed with areas of short-rotation harvest.

About **9,300** acres of timber stands on gentle slopes in five compartments would be managed by group and single tree selection methods. A mixture of tree sizes and ages would occur within these stands. Tree species would tend toward shade-tolerants such as white fir and incense cedar.

The future condition of special management areas, such as streamside management zones, scenic areas, unroaded areas, and noncommercial conifer stands, would most likely be very similar to the existing irregular uneven-aged timber stand structure. Approximately **159,000** acres would reflect this forested condition.

There are **18,705** acres of wilderness, **2,386** acres would be managed as Research Natural Areas and **886** acres would be managed as Special Interest Areas.

The arterial and collector transportation system would be completed.

Existing downhill skiing facilities would be expanded to their maximum capacity. New downhill skiing facilities and key potential developed recreation sites would be developed in response to demand (see Resource Program Direction).

Human-caused changes in natural vegetative patterns would be more evident in the landscape than they are currently. While most highly sensitive areas adjacent to major recreation roads, trails, and use areas would remain natural or predominantly natural in appearance, less conspicuous portions of the Forest would be visually dominated by evidence of human practices.

Semi-primitive nonmotorized and semi-primitive motorized acres would be reduced.

Wildlife species composition would shift slightly from species requiring late successional vegetation to species adapted to early and mid-successional vegetation.

Riparian areas and **SMZ's** would receive a high level of protection. Water quality would remain similar to current conditions.

Range management would provide a vegetative management program that is geared to focus attention on sustained yield of range vegetation to protect the soil and water and provide ecological diversity. On the east side of the Sierra Nevada, 75 percent of the permanent range would be intensively managed, providing forage for 15,800 cattle and sheep. Transitory range among the early successional timber stands (plantations) would increase on the west side of the Sierra. Domestic livestock would be used to reduce competition to the tree seedlings while maintaining particular seral stages for specific wildlife habitat enhancement, providing forage for 5,200 head of cattle and sheep.

TABLE 2.5 - ALTERNATIVE PRF: AVERAGE ANNUAL OUTPUTS BY DECADE

RESOURCE ELEMENT	BASE YEAR		1980 RPA GOALS FOR			DECADES 1/			5
	1982	1990	2030						
RECREATION									
Developed Public (MRVD)	1,388	1,850	2,800	1,976	2,393	2,784	3,129	3,318	
Developed Ski (MRVD)	210			292	379	492	639	830	
Dispersed (MRVD)	2,306	2,550	3,250	2,925	3,436	3,944	4,452	4,960	
Wilderness (MRVD)	0			55	55	55	55	55	
Useable OHV (Miles) 2/									
0 - Closed	819	--	--	88	98	106	109	113	
1 - Open	747	--	--	685	766	830	854	883	
2 - DRO Summer/Open Over Snow	--	--	--	1,193	1,334	1,446	1,488	1,539	
3 - DRO 3/	1,344	--	--	294	329	357	367	379	
4 - DRO Summer/Closed Over Snow	--	--	--	17	79	21	22	23	
5 - Closed Summers. Open Over Snow	--	--	--	43	48	52	54	56	
6 - DRO - Closed 11/16 to 4/30	--	--	--	194	217	235	242	250	
				789	882	956	984	1,017	
Visual Quality Index	520	515	515	505	50	485	47	466	
WILDLIFE AND FISH									
Peregrine Falcon (pairs)	0	3	3	3	3	3	3	3	
Bald Eagle (pairs)	0	5	5	5	5	5	5	5	
Deer (animals)	13 .m	16,000	16,000	13,000	14,500	16,000	15,400	14,500	
Spotted Owls (pairs)	110	110	65	100	91	81	72	65	
Goshawk (territories)	75	75	75	75	75	75	75	75	
Wildlife User Days (MWFUD)	1193	1168	1193	1193	1194	1192	1192	1207	
Fish User Days (MWFUD)	1016	1020	1024	1016	1018	1015	101.5	1028	
Direct Habitat Improvement									
Deer (MWFUD)	31	35	36	35	36	36	36	36	
Other Wildlife Species (Except T&E) (MWFUD)	20	23	24	23	24	24	24	24	
Fish (Except T&E) (MWFUD)	05	06	06	06	06	06	06	06	
Induced Habitat Improvement									
Deer (MWFUD)	615	666	680	666	683	680	680	685	
Other Wildlife Species (Except T&E) (MWFUD)	410	444	453	444	456	453	453	456	
Fish (Except T&E) (MWFUD)	54	61	61	61	62	61	61	62	
Direct Habitat Improvement									
Wildlife (Acres)	1,000	1,m	1,m	1,000	1,000	1,000	1,000	1,000	
Fish (Acres)	20	20	20	20	20	20	20	20	
RANGE									
Grazing (M AUM)	200	185	304	208	209	216	223	230	
TIMBER									
Allowable Sale Quantity (MMBF) 4/	1942	1942	1942	1423	1423	1423	1423	1423	
Allowable Sale Quantity (MMCF)	299	299	299	220	220	220	220	220	
LTSY (MMBF)				1770	1770	1770	1770	1770	
LTSY (MMCF)				272	272	272	272	272	
Reforestation (Acres)	1,450	4,134	4,823	3,865	3,304	3,304	3,384	4,837	
Timber Stand Improvement (Acres)	2,596	3,564	3,634	12,516	5,979	6,825	7,621	7,677	

RESOURCE ELEMENT	1982	1990	2030	1	2	3	4	5
WOOD PRODUCTS OTHER THAN SAWTIMBER								
Fuelwood (Cords)	28,000			27,987	28,903	29,508	30,236	30,971
Biomass (MMCF)				37	36	36	37	36
WATER								
Quality (MM Ac Ft at Standards)	1 98	1 98	2 01	2 ca	208	2 08	2 08	2 09
Increased Quantity (M Ac Ft)				125	118	120	118	130
Watershed Improvement (Acres)	120	270	310	100	90	0	0	0
LANDS AND MINERALS								
Minerals (Plans of Operation)	150	173	222	200	300	300	300	400
Land Acquisition (Acres)	2,300 5/	3,000	0	500	500	500	500	500
HUMAN RESOURCES								
Programs (Enrollees)	31	140	140	140	140	140	140	140
FIRE								
Fuel Treatment (Acres)	4,800	2,800	2,600	3,200	2,800	4,000	3,300	3,500
Expected Acres Burned by Wildfire Intensity Level								
1	20	N/A	N/A	15	20	27	33	35
2	73			52	70	96	114	125
3	94			67	90	123	147	161
4	219			155	209	267	342	376
5	404			288	390	532	637	699
6	228			162	219	300	358	395
Total	1,038			739	998	1,365	1,631	1,790
TRANSPORTATION								
Trail Const/Reconst. (Miles)	230	140	130	72	206	206	206	08
Road Const/Reconst. (Miles)	991	NA	NA	53	43	38	35	35
Road Maintenance (Miles)	2,403			2,494	2,630	2,691	2,708	2,708
FACILITIES								
Dams and Reservoirs								
FS (Number)	24	NA	NA	24	24	24	24	24
Other Federal (Number)	5			5	5	5	5	5
Other State/Local (Number)	38			37	37	37	37	37
Private (Number)	55			44	44	44	44	44
Administrative Sites								
FS Owned (Number)	23			20	20	20	20	20
Leased (Number)	5			3	3	3	3	3
TOTAL BUDGET (MM\$)	187	1967	2206	212	252	296	322	364
TOTAL COST (MM\$)	193			227	270	318	357	391

Decade 1 is the period 1990-1999

1/ OHV Prescription Categories

3/ DRO = Designated Routes Only = Restricted

4/ Potential yield from standard, special and marginal components

5/ Excluding exchange

ALTERNATIVE CUR (Current Management)

1. Theme

Maintain the current range of commodity and amenity benefits necessary to meet existing individual resource plans.

Continue current management emphasis by maintaining wood-fiber and forage production while providing a mixed program of developed and dispersed recreation opportunities

No special issue is emphasized over another. All issues are addressed to the extent allowed by current direction and budget.

2 Resource Program Direction

- a. Recreation. Develop new and improve existing facilities for dispersed recreation in response to demand. Maintain existing developed recreation sites

Expand existing downhill ski areas within their present boundaries to their maximum capacity. Continue facilities operated by the private sector under special-use permit

Manage land surrounding major reservoirs for water-oriented recreation

Provide about 46,000 acres of SPM and 53,000 acres of SPNM ROS-class recreation opportunities.

Administer off-highway vehicle use and management according to the Off-Highway Vehicle Travel and the Transportation Management Plans

Follow visual quality direction in the Truckee-Little Truckee Rivers and Mohawk Land Use Unit Plans. Determine visual quality objectives (VQO's) on a project basis for the remainder of the Forest using Multiple-Use Management Plan visual zones as guidelines.

- b. Research Natural Areas. Recommend to the Chief the establishment of Babbitt Peak (1,061 acres) as an RNA
- c. Special Interest Areas. The following SIA is established. Placer County Big Tree Grove (346 acres).
- d. Wilderness. Manage Granite Chief as wilderness (18,705 acres).
- e. Fish and Wildlife. Use the recovery and management plans as guides for managing Federal threatened and endangered species. Provide a network of 33 spotted owl habitat management areas. Maintain viable populations of all local fish and wildlife species. Give additional attention to Forest Service sensitive and harvest species.
- f. Forest Pests. Implement a high level of integrated pest management over a large forested acreage suitable for timber production.
- g. Range. On about 25 percent of the permanent rangelands in the eastside pine stands, implement range improvement practices, such as seeding, fencing, and water developments, to facilitate improved grazing systems such as deferred and rest-rotation grazing. On the transitory range, use the existing and potential forage created by timber management practices in harmony with other resource needs and objectives, implement extensive grazing management practices, such as fencing and water.

- h. **Timber.** Manage timber to meet the volume objectives in the Tahoe Timber Management Plan of 1978. All roadless area lands released by the California Wilderness Act of 1984 that are suitable for timber production are available for timber management. Manage timber stands at the intensity and emphasis for each capability area described in the District Multiple-Use and other Unit Plans. Establish harvest priorities and outputs using the even-aged silvicultural system. Timber yield calculations are based upon the nondeclining even-flow timber policy.
- i. **Water and Soil.** Maintain water quality standards. Restore water quality on 500 acres of stream channels, meadows, roads, and old wildfire areas.
- j. **Minerals.** The management direction for minerals that is common to all alternatives applies.
- k. **Landownership and Special Uses.** Respond to opportunities for land exchange or land acquisition in accordance with the current landownership adjustment plans. Continue to evaluate requests for nonrecreation special-uses on a case-by-case basis.
- l. **Facilities.** Emphasize road construction and maintenance to support the timber program. Reconstruct roads with high recreational use. Maintain facilities at building investment level III; provide for improvement and replacement of existing facilities.
- m. **Fire Management.** Maintain a combination of suppression (initial attack), prevention, and detection programs. **Fuels** management would primarily treat fuels created by other resource activities.

No significant changes in the kinds and amount of equipment, people or dollars would be expected. The fire program organization (1982 level) would be as follows:

 - o Prevention and detection (32 percent)
 - o Suppression (51 percent)
 - o Fuel management (17 percent)
- n. **Riparian/SMZ.** Apply the Regional MMR for riparian/SMZ's. This schedules timber harvest at a lower level within the first 100-foot horizontal distance on either side of perennial streams. Streamside zones adjacent to intermittent and ephemeral streams would be managed under the same intensity as their encompassing strata.
- o. **Diversity.** Provide a minimum of 1.5 snags/acre in all planning compartments. Also provide at least 5 sq. ft. basal area in hardwoods in mixed-conifer and hardwood-conifer mixed stands.

3. The Environment to be Created

Timber harvesting, reforestation, timber stand improvement, range practices, and wildlife habitat improvement would produce a forest of greater diversity than currently exists.

The major change in vegetation by the year 2030 would be the replacement of a portion of the existing timber stands by even-age, young growth conifer stands. This alternative would have about 202,500 acres, or 30 percent of the existing forested land, of new timber stands less than 50 years old. The understory vegetation in these plantations would feature a combination of light densities of brush intermingled with small amounts of slash and natural fuels.

About 337,200 acres would be managed for timber on a short rotation (50-120 years). This timber management approach would result in a mosaic of similar sized, even-aged timber stands that differ by 10-year age classes. The larger trees would be 18 to 27 inches in diameter. The ground fuels would be scattered brush and light slash. This forested pattern would exist in areas of intensive timber management to create and maintain a regulated forest.

Long rotation (**150+** years) even-aged timber management would be applied to about **121,200** acres. This timber management approach would result in a mosaic of even-aged timber stands. The larger trees would be 30 to **40** inches in diameter. The ground fuels would be an accumulation of moderate slash and natural fuels with patches of mature brush. This forested pattern would exist in areas emphasizing late successional wildlife habitats or scenic quality (distant view zones or areas with partial retention **VQOs**), and would be intermixed with areas of short-rotation harvest.

The future condition of special management areas, such as streamside management zones, scenic areas, unroaded areas, and noncommercial conifer stands, would most likely be very similar to the existing irregular uneven-aged timber stand structure. Approximately **146,400** acres would reflect this forested condition.

There are **18,705** acres of wilderness; **1,061** acres would be managed as a Research Natural Area and **346** acres as a Special Interest Area.

The arterial and collector road system would be completed to accommodate timber and recreation activities.

Existing downhill ski facilities would be expanded to their maximum capacity within their present boundaries.

The Forest landscape would have a higher level of unnatural changes in vegetative patterns than it does under existing conditions. Most visually sensitive areas adjacent to major roads or recreation sites would remain natural or predominantly natural, but evidence of human practices would visually dominate most of the Forest.

Habitats produced by this alternative would favor wildlife species adapted to early and mid-successional vegetation.

Riparian areas and **SMZ's** receive the minimum level of protection allowed by Regional planning direction. The percentage of water yield meeting standards would slightly decline from current conditions.

On the east side of the Sierra Nevada, 25 percent of the permanent range would be intensively managed, providing forage for **12,000** cattle and sheep. Transitory range among the early successional timber stands (plantations) would increase on the west side of the Sierra. Domestic livestock would be used to reduce competition to the tree seedlings while maintaining particular seral stages for specific wildlife habitat enhancement, providing forage for **6,000** cattle and sheep.

TABLE 2.6 -ALTERNATIVE CUR AVERAGE ANNUAL OUTPUTS BY DECADE

RESOURCE ELEMENT	BASE YEAR	1980 RPA GOALS FOR			DECADES1/				
	1982	1990	2030	1	2	3	4	5	
RECREATION									
DevelopedPublic (MRVD)	1,388	1,850	2,800	1,976	2,185	2,185	2,185	2,185	
DevelopedSki (MRVD)	210			292	379	492	639	830	
Dispersed (MRVD)	2,306	2,550	3,250	2,925	3,436	3,944	4,452	4,960	
Wilderness (MRVD)	0			55	55	55	55	55	
Useable OHV (Miles) 2/									
0 - Closed	819			82	90	97	102	106	
1 - Open	747			1,486	1,629	1,756	1,851	1,923	
2 - DRO Summer/Open Over Snow				808	886	955	1,007	1,046	
3 - DRO 3/	1,344			9	10	11	12	12	
4 - DRO Summer/Closed Over Snow				20	22	24	25	26	
5 - Closed Summers- Open Over Snow				46	50	54	57	59	
6 - DRO - Closed 11/16 to 4/30				57	62	67	71	74	
Unuseable OHV (Miles)				787	863	930	980	1,018	
Visual Quality Index	52.0	51.5	51.5	499	470	443	41.8	41.8	
WILDLIFE AND FISH									
Peregrine Falcon (pairs)	0	3	3	3	3	3	3	3	
Bald Eagle (pairs)	0	5	5	5	5	5	5	5	
Deer (animals)	13,000	16,000	16,000	13,000	14,800	16,000	16,000	14,500	
Spotted Owls (pairs)	110	110	65	100	92	84	75	66	
Goshawk (territories)	75	75	75	75	75	75	75	75	
Wildlife User Days (MMFUD)	105.8			1390	1630	1860	2070	2280	
Fish User Days (MMFUD)	902			920	1070	1220	1380	1550	
Direct Habitat Improvement									
Deer (MMFUD)	31			28	28	29	22	23	
Other Wildlife Species (Except T&E) (MMFUD)				19	19	19	14	14	
Fish (Except T&E) (MMFUD)	05			05	05	05	04	04	
Induced Habitat Improvement									
Deer (MMFUD)	61.5			70.0	63.1	95.1	107.0	118.0	
Other Wildlife Species (Except T&E) (MMFUD)	40.0			47.4	55.2	63.0	71.3	79.2	
Fish (Except T&E) (MMFUD)	5.4			6.4	7.5	8.6	9.7	10.7	
Direct Habitat Improvement									
Wildlife (Acres)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Fish (Acres)	20	20	20	20	20	20	20	20	
RANGE									
Grazing (M AUM)	20.0	18.5	30.4	22.4	22.9	22.1	20.5	20.0	
TIMBER									
Allowable Sale Quantity (MMBF) 4/	1942	1942	1942	1734	1937	1937	1937	1937	
Allowable Sale Quantity (MMCF)	29.9	29.9	29.9	26.7	29.8	29.8	29.8	29.8	
LTSY (MMBF)				242.0	242.0	242.0	242.0	242.0	
LTSY (MMCF)				37.2	37.2	37.2	37.2	37.2	
Reforestation (Acres)	1,450	4,134	4,823	5,070	5,280	4,990	3,990	4,040	
Timber Stand Improvement (Acres)	2,596	3,564	3,630	4,900	9,110	9,770	8,490	8,490	

TABLE 2.6 - ALTERNATIVE CUR AVERAGE ANNUAL OUTPUTS BY DECADE (Continued)

	BASE YEAR	1980 RPA GOALS FOR			DECADES 1/				
RESOURCE ELEMENT	1982	1990	2030	1	2	3	4	5	
WOOD PRODUCTS OTHER THAN SAWTIMBER									
Fuelwood (Cords)	28,000			38,630	45,850	46,560	46,270	45,450	
Biomass (MMCF)				42	46	45	45	45	
WATER									
Quality (MM Ac Ft. at Standards)	196	198	201	205	206	208	207	207	
Increased Quantity (M Ac Ft.)				110	121	146	130	137	
Watershed Improvement (Acres)	120	270	310	25	25	0	0	0	
LANDS AND MINERALS									
Minerals (Plans of Operation)	150	173	222	240	250	300	400	400	
Land Acquisition (Acres)	2,300 5/	3,000	0	248	250	400	300	200	
HUMAN RESOURCES									
Programs (Enrollees)	31	140	140	57	63	63	63	63	
FIRE									
Fuel Treatment (Acres)	4,800	2,800	2,600	6,400	8,500	8,500	6,900	7,500	
Expected Acres Burned by Wildfire									
	20	N/A	N/A	35	37	46	54	60	
	73			128	136	168	196	218	
-	94			165	175	216	252	281	
4	219			383	408	504	587	655	
5	404			707	753	929	1,083	1,208	
6	228			399	425	524	611	682	
Total	1038			1,817	1,935	2,387	2,782	3,105	
TRANSPORTATION									
Trail Const/Reconst (Miles)	230	140	130	165	149	163	35	35	
Road Const/Reconst (Miles)	991	NA	NA	76	55	48	48	48	
Road Maintenance (Miles)	2,403			2,530	2,717	2,751	2,751	2,751	
Dams and Reservoirs									
FS (Number)	24	NA	NA	24	24	24	24	24	
Other Federal (Number)	5			5	5	5	5	5	
Other State/Local (Number)	38			37	37	37	37	37	
Private (Number)	55			44	44	44	44	44	
Administrative Sites									
FS Owned (Number)	23			20	20	20	20	20	
Leased (Number)	5			3	3	3	3	3	
TOTAL BUDGET (MM\$)	187	1967	2206	201	224	250	265	291	
TOTAL COST (MM\$)	193			214	237	265	280	307	

ALTERNATIVE RPA (1980 RPA)

1. Theme

Achieve the TNF's share of the **1980** RPA Program as defined in the Pacific Southwest Regional Guide. These Program targets are discussed in each resource element below.

Emphasize a mixture of commodities and amenities that meets the assigned targets.

Specific issues emphasized are **(#5)** facilities; **(#6)** forage, wood, and soils, **(#8)** recreation; and **(#9)** fish and wildlife habitat

2. Resource Program Direction

- a. Recreation. Meet the **1980** RPA targets for developed and dispersed recreation by the year **1990**. The developed recreation target is **1,930,000 RVDs**, the dispersed recreation target is **2,610,000 RVD's**. Develop support facilities for both winter and summer dispersed recreation activities. Maintain trail systems to meet dispersed recreation targets.

Continue recreation facilities operated by the private sector under special-use permits. Expand facilities, including developed campgrounds and ski areas, to meet the RPA targets through the year 2030.

Provide about **17,000** acres of SPM and **77,000** acres of SPNM ROS-class recreation opportunities

Manage land surrounding major reservoirs for water-oriented recreation.

Off-highway vehicle use and management would remain basically the same as present, with necessary changes for resource protection

Where possible, meet the visual quality objective targets are based on the initial **VQO's** stated in the Pacific Southwest Regional Guide and Planning Direction. Retention and partial retention would be the VQO targets for most visually sensitive areas along major roads and trails and around recreation facilities

Accelerate cultural resource inventory to achieve a complete Forest inventory by **1995**

Meet the RPA targets of **14** to **16** miles per year for trail construction and reconstruction in the first decade.

- b. Research Natural Areas. Recommend to the Chief the establishment of Babbitt Peak (**1,061** acres) as an RNA
- c. Special Interest Areas. The following SIA is established: Placer County Big Tree Grove (**346** acres).
- d. Wilderness. Manage Granite Chief as wilderness (**18,705** acres).
- e. Fish and Wildlife. Use the species recovery and management plans as guides for managing bald eagles, peregrine falcons, and Lahontan cutthroat trout. Manage a network of **34** spotted owl habitat management areas. Maintain viable populations of all local fish and wildlife species. Give additional attention to Forest Service sensitive species, harvest species, and cavity nesting species.
- f. Forest Pests. Implement a high level of integrated pest management over a large forested acreage suitable for timber production
- g. Range. Implement range improvement practices, such as seeding, fencing, water developments, and other range improvements, on about 80 percent of all capable, available, and suitable permanent

range to achieve an AUM production level 46 percent above the 1981 level as allocated in the Regional Forester's letter of June 1982. The 1980 RPA target is to produce 18,500 AUMs by the year 1990 and 30,400 AUMs by the year 2030. Fully use the transitory range created through timber management practices in harmony with other resource objectives and needs by developing new and improved grazing systems and techniques.

- h. Timber. Apply intensive timber management practices to land available, capable, and suitable for timber production with the objective of attaining the 1980 RPA harvest schedule. The even-age silvicultural system would be the principal method of regulating lands suitable for timber production. Timber yield calculations are based upon the nondeclining even-flow timber policy. The allowable sale quantity of timber is designed to produce at least the following average annual sale quantity levels.

1981-1990 - 164.5 MMBF
1991-2000 - 186.0 MMBF
2001-2030 - 198.4 MMBF

- i. Water and Soil. Rehabilitate 2,500 acres of declining watershed through the application of manual and structural practices. The 2,500 acres is a more accurate estimate of maximum treatable acres than the 1980 RPA target.
- j. Minerals. The Granite Chief Wilderness is withdrawn from all forms of mineral entry and leasing. Propose withdrawing from mineral entry the RNAs and SIA's, areas of concentrated public use, and areas along portions of designated or eligible State scenic highways not previously withdrawn (200 feet from centerline along Highways 20, 49, and 89 and approximately 400 feet on each side of Interstate 80).
- k. Landownership and Special Uses. Meet long-range goals of RPA which are to (1) mark and post 2,700 miles of Forest boundary by the year 2020 to complete the RPA backlog and (2) resolve existing occupancy trespass by the year 2000. Acquire all private land within the Granite Chief Wilderness.

The 1980 RPA Program targets for land purchase and acquisition on the TNF ranged from 2,300 to 3,000 acres per year for the first decade. The RPA targets were based on an active land acquisition program in the North Fork American Wild River. Recent, very restrictive county zoning and a reduced Land and Water Conservation Fund has lessened both the need for and the expectation of funding for major purchases in this area. The targets under this alternative call for land purchase and acquisition of about 250 acres per year in the first decade.

- l. Facilities. Construct and maintain roads to access areas for resource management to meet RPA goals. Maintain facilities at building investment level III. Provide for improvement and replacement of existing facilities.
- m. Fire Management. Emphasize all small engines and hand crews. Continue fuel treatment at present or greater levels using both engine and hand crews. The specific program organization would consist of the following:
 - o Prevention and detection (40 percent).
 - o Suppression, including fuel management (60 percent).
- n. Riparian/SMZ. Apply the Regional MMR for riparian areas/SMZ's. This schedules timber harvest at a lower level within the first 100-foot horizontal distance on either side of perennial streams. Streamside zones adjacent to intermittent and ephemeral streams would be managed under the same intensity as their encompassing strata.
- o. Diversity. Provide a minimum of 1.5 snags/acre in all eastside planning compartments. Establish a goal of 2.0 snags/acre for all westside compartments. Also provide at least 5 sq. ft. basal area of hardwoods per acre in mixed-conifer and hardwood-conifer mix stands.

3. The Environment to be Created

Timber harvesting, reforestation, timber stand improvement, range practices, and wildlife habitat improvement would produce a forest of greater diversity than currently exists.

The major change in vegetation by the year **2030** would be the replacement of a portion of the existing timber stands by even-age young growth conifer stands. This alternative would have about **225,400** acres, or **33** percent of the existing forested land, of new timber stands less than 50 years old. The understory vegetation in these plantations would feature a combination of light densities of brush intermingled with small amounts of slash and natural fuels.

About **378,200** acres would be managed for timber on a short rotation (**50-120** years). This timber management approach would result in a mosaic of similar sized, even-aged timber stands that differ by 10-year age classes. The larger trees would be **18** to **27** inches in diameter. The ground fuels would be scattered brush and light slash. This forested pattern would exist in areas of intensive timber management practices to create and maintain a regulated forest.

Long rotation (**150+** years) even-aged timber management would be applied to about 80,800 acres. This timber management approach would result in a mosaic of even-aged timber stands. The larger trees would be **30** to **40** inches in diameter. The ground fuels would be an accumulation of moderate slash and natural fuels with patches of mature brush. This forested pattern would exist in areas emphasizing late successional wildlife habitats and scenic quality goals (partial retention VQO's) and would be intermixed with areas of short-rotation harvest.

The future condition of special management areas, such as streamside management zones, scenic areas, unroaded areas, and noncommercial conifer stands would most likely be very similar to the existing irregular uneven-aged timber stand structure. Approximately **121,700** acres would reflect this forested condition.

There are **18,705** acres of wilderness; 1,061 acres would be managed as a Research Natural Area and 346 acres as a Special Interest Area.

The arterial and collector transportation system would be completed. Local roads would be managed for dispersed recreation use.

Existing downhill skiing facilities and developed campgrounds would be expanded to meet RPA targets. Dispersed recreation and support facilities also would be developed to meet RPA targets.

Human-caused changes in vegetative patterns would be more evident in the landscape than they are currently. **Most** lands seen from major roads, trails, and recreation facilities would appear natural or predominantly natural, but most other areas would be visually dominated by the effects of human practices.

Wildlife species composition would shift from species requiring late successional vegetation to species adapted to early and midsuccessional vegetation.

Riparian areas and **SMZ's** would receive the minimum level of protection allowed by Regional planning direction. The percentage of water yield meeting standards would slightly decline from current levels.

Range management would provide a vegetative management program that is geared to focus attention on sustained yield of range vegetation to protect the soil and water and provide ecological diversity. On the east side of the Sierra Nevada, 80 percent of the permanent range would be intensively managed, providing forage for **22,900** head of cattle and sheep. Transitory range among the early successional timber stands (plantations) would increase on the west side of the Sierra. Domestic livestock would be used to reduce competition to the tree seedlings while maintaining particular seral stages for specific wildlife habitat enhancement, providing forage for **5,400** head of cattle and sheep.

TABLE 2.7 -ALTERNATIVE RPA AVERAGE ANNUAL OUTPUTS BY DECADE

BASE YEAR 1980 RPA GOALS FOR DECADES 1/

RESOURCE ELEMEN	1982	1990	2030	1	2	3	4	5
RECREATION								
Developed Public (MRVD)	1,388	1,850	2. m	1,976	2,393	2,784	2,913	2,913
Developed Ski (MRVD)	210			292	379	492	639	639
Dispersed (MRVD)	2,306	2,550	3,250	2,925	3,436	3,944	4,452	4,960
Wilderness (MRVD)	0			55	55	55	55	55
Useable OHV (Miles) 2/								
0 - Closed	819					167	173	179
1 - Open	747			688	785	864	894	924
2 - DRO Summer/Open Over Snow				1,111	1,268	1,396	1,445	1,493
3 - DRO 3/	1,344			338	386	425	440	455
4 - DRO Summer/Closed Over Snow				21	22	21	22	23
5 - Closed summers/Open Over Snow				43	49	54	56	58
6 - DRO - closed 11/16 to 4/30				194	221	243	252	260
Unuseable OHV (Miles)				792	904	995	1,030	1,084
Visual Quality Index	52.0	51.5	51.5	49.1	46.9	44.1	42.4	42.4
WILDLIFE AND FISH								
Peregrine Falcon (pairs)	0	3	3	3	3	3	3	3
Bald Eagle (pairs)	0	5	5	5	5	5	5	5
Deer (numbers)	13,000	16,000	16,000	13,300	13,900	16,000	15,700	16,000
Spotted Owls (pairs)	110	110	60	100	90	80	70	60
Goshawk (territories)	75	75	75	75	75	75	75	75
Wildlife User Days (MWFUD)	1058					171.0	191.0	211.0
Fish User Days (MWFUD)	90.2			1070	1250	1430	160.0	1780
Direct Habitat Improvement								
Deer (MWFUD)	31			5.9	5.9	5.9	5.3	5.3
Other Wildlife Species (Except T&E) (MWFUD)	2.0			4.0	4.0	4.0	3.6	3.6
Fish (Except T&E)				1.2	1.2	1.2	1.0	1.0
Induced Habitat Improvement								
Deer (MWFUD)	61.5			71.2	83.7	95.1	107.1	118.9
Other Wildlife Species (Except T&E) (MWFUD)	4.0			46.8	55.2	63.8	72.1	79.3
Fish (Except T&E) (MWFUD)	5.4				7.0	8.0	8.9	9.9
Direct Habitat Improvement								
Wildlife (Acres)	1. m	1,000	1. m	1. m	1. m	1. m	1. m	1,200
Fish (Acres)	120	20	25	20	25	25	25	25
RANGE								
Grazing (M AUM)	20.0	18.5	30.4	34.2	34.1	33.9	31.8	30.4
TIMBER								
Allowable Sale Qty (MMBF) 4/	194.2	194.2	194.2	1730	186.0	198.4	198.4	198.4
Allowable Sale Qty (MMCF)	29.9	29.9	29.9	26.6	28.6	30.5	30.5	30.5
LTSY (MMBF)				2342	234.2	2342	2342	2342
LTSY (MMCF)				360	36.0	360	360	360
Reforestation (Acres)	1,450	4,134	4,820	6,980	4,830	9,500	3,810	3,250
Timber Stand Improvement (Acres)	2,596	3,564	3,634	7,740	16,670	10,560	9,920	6,670

TABLE 2.7 -ALTERNATIVE RPA AVERAGE ANNUAL OUTPUTS BY DECADE (Continued)

RESOURCE ELEMENT	BASE YEAR	1980 RPA GOALS FOR			DECADES1/				
	1982	1990	2030	1	2	3	4	5	
WOOD PRODUCTS OTHER THAN SAWTIMBER									
Fuelwood (Cords)	28,000			38,550	46,260	46,910	48,540	46,270	
Biomass (MMCF)				42	49	50	52	49	
WATER									
Quality (MM Ac Ft at Standards)	196	198	201	208	206	209	206	207	
Increased Quantity (M Ac.Ft.)				144	121	156	125	134	
Watershed Improvement (Acres)	120	270	310	100	90	60	0	0	
LANDS AND MINERALS									
Minerals (Plans of Operation)	150	173	222	240	250	300	400	400	
Land Acquisition (Acres)	2,300 5/	3,000	0	250	250	250	250	250	
HUMAN RESOURCES									
Programs (Enrollees)	31	140	140	140	140	140	140	140	
FIRE									
Fuel Treatment (Acres)	4,800	2,800	2,600	10,900	10,200	10,100	7,300	7,200	
Expected Acres Burned by Wildfire Intensity Level.									
1	20	N/A	N/A	14	19	28	32	38	
2	73			52	71	101	118	140	
3	94			67	91	131	152	180	
4	219			155	212	304	353	419	
5	404			286	392	561	652	773	
6	228			162	221	317	368	436	
Total	1,038			736	1,007	1,442	1,675	1,986	
TRANSPORTATION									
Trail Const/Reconst (Miles)	230	140	130	207	197	211	49	50	
Road Const/Reconst (Miles)	991	NA	NA	74	54	47	47	47	
Road Maintenance (Miles)	2,403			2,535	2,700	2,733	2,733	2,733	
FACILITIES									
Dams and Reservoirs									
F S (Number)	24	NA	NA	24	24	24	24	24	
Mher Federal (Number)	5			5	5	5	5	5	
Mher State/Local (Number)	38			37	37	37	37	37	
Private (Number)	55			44	44	44	44	44	
Administrative Sites									
F S Owned (Number)	23			20	20	20	20	20	
Leased (Number)	5			3	3	3	3	3	
TOTAL BUDGET (MM\$)	187	1967	2206	243	261	306	299	305	
TOTAL COST (MM\$)	193			255	274	319	313	318	

1/ Decade 1 is the period 1990-1999

2/ OHV Prescription Categories

3/ DRO = Designated Routes Only = Restricted

4/ Potential yield from standard, special and marginal components

5/ Excluding exchange

ALTERNATIVE CMD (Commodity)

1. Theme

Achieve high timber commodity outputs while providing amenity benefits at economically efficient levels

Emphasize intensive management of the timber resource on forest lands capable of producing at least 20 cubic feet of timber per acre per year. Resolve in favor of the timber resource any conflicts with other commodity or amenity resources.

The specific issue emphasized is (#6) forage, wood, and soils and (#8) recreation.

2. Resource Program Direction

- a. Recreation. Do not expand existing or develop new recreation sites, including ski areas, on capable forest land. Continue existing special-use permits for facilities operated by the private sector.

Restrict OHV travel to avoid conflicts with timber management or damage to capable forest land.

Provide around 45,000 acres of SPM and 52,000 acres of SPNM dispersed recreation opportunities.

Establish visual quality direction which would be compatible with the use of the timber resource. The predominant visual quality objective throughout the Forest would be modification.

- b. Research Natural Areas. Recommend to the Chief the establishment of Babbitt Peak (1,061 acres) and Sugar Pine Point (625 acres) as RNAs.
- c. Special Interest Areas. The following **SIA's** are established: Placer County Big Tree Grove (346 acres), Sagehen Headwaters (79 acres), Devils Postpile Geologic Area (69 acres), Glacier Meadow Geologic Area (84 acres), Grouse Falls Scenic Area (220 acres), Meadow Lake Cultural Area (58 acres), and Mason Fen (30 acres).
- d. Wilderness. Manage Granite Chief as wilderness (18,705 acres).
- e. Fish and Wildlife. Use the recovery and management plans as guides for managing Federal threatened and endangered species. Provide a network of 33 spotted owl habitat management areas. Maintain viable populations of all local fish and wildlife species. Give additional attention to Forest Service sensitive and harvest species.
- f. Forest Pests. Implement a high level of integrated pest management over a large forested acreage suitable for timber production.
- g. Range. On about 75 percent of the capable, available, and suitable permanent range, implement range improvement practices, such as seeding, fencing, and water developments, to facilitate improved grazing systems such as deferred grazing and rest rotation. On the transitory range, fully use in harmony with other resource objectives and needs the existing and potential forage created by timber management practices, both inside and outside of existing allotments, by developing new and improved grazing systems and techniques. Study range management practices on low-site eastside pine lands that would increase forage production and maintain site productivity.
- h. Timber. Practice intensive timber management on capable, available, and suitable forest land. Timber yield calculations are based upon the nondeclining even-flow timber policy. Place emphasis on site-specific silvicultural prescriptions utilizing all treatments where appropriate. Clearcutting will be limited to 2,300 acres per year and uneven-age management group selection will be used on about 39,000 acres (about 250 acres per year).

- i. **Water and Soil.** Restore water quality on 500 acres of forest lands where productivity is declining, for example, on old wildfire sites
- j. **Minerals.** Allow no saleable mineral development on land available, capable, and suitable for timber harvesting. Do not recommend developing leaseable prime forest land. Propose withdrawing from mineral entry the Research Natural and Special Interest Areas
- k. **Lands.** Direct land adjustment activities to acquire capable forest land and recreation and Special Interest Areas

Evaluate nonrecreation special-uses on a case-by-case basis to minimize conflicts with timber management objectives
- l. **Facilities.** Expand the transportation system into unroaded capable forest land. Maintain the local road system for multiple reentries to aid intensive timber management.

Maintain facilities at building investment level IV; provide for minimum construction of new facilities.
- m. **Fire Management.** Emphasize all small engines and hand crews. Continue fuel treatment at present or greater levels using both engine and hand crews. The specific program organization would consist of the following:
 - o Prevention and detection (40 percent).
 - o Suppression, including fuel management (60 percent).
- n. **Riparian/SMZ.** Apply the Regional MMR for riparian areas/SMZ's. This schedules timber harvest at a lower level within the first 100-foot horizontal distance on either side of perennial streams. Streamside zones adjacent to intermittent and ephemeral streams would be managed under the same intensity as their encompassing strata
- o. **Diversity.** Provide a minimum of 1.5 snags per acre in all planning compartments. Retain at least 5 sq. ft. per acre basal area in hardwoods in hardwood-conifer mixed stands.

3. The Environment to be Created

Timber harvesting, reforestation, timber stand improvement, range practices, and wildlife habitat improvement would produce a forest of greater diversity than currently exists.

The major change in vegetation by the year 2030 would be the replacement of a portion of the existing timber stands by even-age young growth conifer stands. This alternative would have about 235,160 acres, or 34 percent of the existing forested land, of new timber stands less than 50 years old. The understory vegetation in these plantations would feature a combination of light densities of brush intermingled with small amounts of slash and natural fuels.

About 269,200 acres would be managed for timber on a short rotation (50-120 years). This timber management approach would result in a mosaic of similar sized, even-aged timber stands that differ by 10-year age classes. The larger trees would be 18 to 27 inches in diameter. The ground fuels would be scattered brush and light slash. This forested pattern would exist in areas of intensive timber management to create and maintain a regulated forest.

Long rotation (150+ years) even-aged timber management would be applied to about 150,400 acres. This timber management approach would result in a mosaic of even-aged timber stands. The larger trees would be 30 to 40 inches in diameter. The ground fuels would be an accumulation of moderate slash and natural fuels with patches of mature brush. This forested pattern would exist in areas emphasizing late successional wildlife habitats and scenic quality and would be intermixed with areas of short rotation harvest.

Uneven-age management by group selection would be applied to 39,700 acres. Stands would have trees of a variety of ages and sizes in small groups. Tree species composition would tend toward shade-intolerant species such as white fir and incense-cedar.

The future condition of special management areas, such as streamside management zones, unroaded areas, and noncommercial conifer stands, would most likely be very similar to the existing irregular uneven-aged timber stand structure. Approximately 132,600 acres would reflect this forested condition.

There are 18,705 acres of wilderness, 1,686 acres would be managed as Research Natural Areas and 886 acres as Special Interest Areas

The arterial and collector transportation system would be completed.

Downhill skiing facilities would be expanded to their maximum capacity concentrating on expanding existing areas first then new sites that would not have high timber values

The Forest vegetation would appear more greatly changed than it does at present. The landscape would reflect more managed vegetative alterations with even-aged timber stands. Modifications caused by human practices would dominate almost all of the Forest, except along the scenic highways.

Wildlife species composition would shift from species requiring late successional forest habitat to species adapted to early and midsuccessional vegetation.

Riparian areas and SMZs would receive the minimum level of protection allowed by Regional planning direction. The percentage of water yield meeting standards would slightly decrease from current levels

Range management would provide a vegetative management program that is geared to focus attention on sustained yield of range vegetation to protect the soil and water and provide ecological diversity. On the east side of the Sierra Nevada, 75 percent of the permanent range would be intensively managed, providing forage for 19,200 head of cattle and sheep. Transitory range among the early successional timber stands (plantations) would increase on the west side of the Sierra. Domestic livestock would be used to reduce competition to the tree seedlings while maintaining particular seral stages for specific wildlife habitat enhancement, providing forage for 5,200 head of cattle and sheep.

TABLE 2.8 - ALTERNATIVE C M D AVERAGE ANNUAL OUTPUTS BY DECADE

RESOURCE ELEMENT	BASEYEAR	1980 RPA GOALS FOR			DECADES1/				
	1982	1990	2030	1	2	3	4	5	
RECREATION									
Developed Public (MRVD)	1,388	1,850	2,800	1,976	2,393	2,784	3,129	3,318	
Developed Ski (MRVD)	210			292	379	492	639	830	
Dispersed (MRVD)	2,306	2,550	3,250	2,925	3,436	3,944	4,452	4,960	
Wilderness (MRVD)	0			55	55	55	55	55	
Useable OW (Miles) 2/									
0 - Closed	819						111	114	
1 - Open	747			859	966	1,066	1,108	1,140	
2 - DRO Summer/Open Over Snow				1,144	1,295	1,428	1,491	1,534	
3 - DRO 3/	1,344			302	342	377	394	405	
4 - DRO Summer/Closed Over Snow				17	19	21	22	23	
5 - Closed Summers - Open Over Snow				168	190	210	219	225	
6 - DRO - Closed 11116 to 4/30				0	0	0	0	0	
Unuseable OHV (Miles)				806	912	1,006	1,050	1,080	
Visual Quality Index	520	51.5	51.5	49.1	46	43	40.5	39.9	
WILDLIFE AND FISH									
Peregrine Falcon (pairs)	0	3	3	3	3	3	3	3	
Bald Eagle (pairs)	0	5	5	5	5	5	5	5	
Deer (animals)	13,000	15,000	13,000	13,900	13,900	16,600	16,068	14,858	
Spotted Owls (pairs)	110	110	59						
Goshawk (territories)	75	75	75	75	75	75	75	75	
Wildlife User Days (MWFUD)	1058			120.1	121.1	120.5	120.3	120.1	
Fish User Days (MWFUD)	902			102.3	103.1	102.6	102.4	103.9	
Direct Habitat Improvement									
Deer (MWFUD)	3.1			3.5	3.5	3.5	3.5	3.6	
Other Wildlife Species (Except T&E) (MWFUD)	2.0			2.4	2.4	2.4	2.4	2.4	
Fish (Except T&E) (MWFUD)	0.5			0.7	0.6	0.6	0.6	0.6	
Induced Habitat Improvement									
Deer (MWFUD)	61.5			67.0	67.2	67.1	67.2	67.6	
Other Wildlife Species (Except T&E) (MWFUD)	41.0			44.7	44.8	44.7	44.8	45.0	
Fish (Except T&E) (MWFUD)	5.4			6.6	6.1	6.1	6.1	6.1	
Direct Habitat Improvement									
Wildlife (Acres)	1,000			200	200	200	200	200	
Fish (Acres)	120			10	10	10	10	10	
RANGE									
Grazing (M AUM)	20.0	18.5	30.4	20.8	20.9	22.4	24.0	27.0	
TIMBER									
Allowable Sale Quantity (MMBF) 4/	194.2	194.2	194.2	180.1	184.8	189.6	194.5	196.9	
Allowable Sale Quantity (MMCF)	29.9	29.9	29.9	27.8	28.5	29.2	30.0	30.3	
LTSY (MMBF)				215.5	215.5	215.5	215.5	215.5	
LTSY (MMCF)				33.1	33.1	33.1	33.1	33.1	
Reforestation (Acres)	1,450	4,134	4,823	5,953	4,017	5,049	3,737	4,760	
Timber Stand Improvement (Acres)	2,596	3,564	3,634	12,571	5,544	8,529	10,702	8,856	

TABLE 2.8 -ALTERNATIVE CMD: AVERAGE ANNUAL OUTPUTS BY DECADE (Continued)

RESOURCE ELEMENT	1982	1980 RPA GOALS FOR		DECADES 1/				
		1990	2030	1	2	3	4	5
WOOD PRODUCTS OTHER THAN SAWTIMBER								
Fuelwood (Cords)	28,000			35,680	37,473	39,415	38,676	43,164
Biomass (MMCF)				4 5	4 6	4 7	5 1	5 0
WATER								
Quality (MM Ac Ft at Standards)	1 96	1 98	2 01	2 05	2 07	2 07	2 06	2 07
Increased Quantity (M Ac Ft)				116	134	136	124	136
Watershed Improvement (Acres)	120	270	310	25	25	0	0	0
LANDS AND MINERALS								
Minerals (Plans of Operation)	150	173	222	300	400	500	500	600
Land Acquisition (Acres)	2,300 5/	3,000	0	800	800	800	800	800
HUMAN RESOURCES								
Programs (Enrollees)	31	140	140	140	140	140	140	140
FIRE								
Fuel Treatment (Acres)	4,800	2,800	2,600	5,800	3,700	4,500	4,100	4,300
Expected Acres Burned by Wildfire Intensity Level								
1	20	N/A	N/A	14	19	28	34	41
2	73			52	71	100	118	144
3	94			67	91	128	152	185
4	219			155	213	299	354	432
5	404			286	393	556	659	803
6	228			162	222	313	372	453
Total	1,038			736	1,009	1,424	1,689	2,058
TRANSPORTATION								
Trail Const /Reconst (Miles)	23 0	14 0	13 0	7 2	20 6	20 6	20 6	0 8
Road Const/Reconst (Miles)	99 1	NA		74	54	47	47	47
Road Maintenance (Miles)	2,403			2,538	2,707	2,741	2,741	2,741
FACILITIES								
Dams and Reservoirs								
FS (Number)	24			24	24	24	24	24
Mher Federal (Number)	5			5	5	5	5	5
Mher State/Local (Number)	38			37	37	37	37	37
Private (Number)	55			44	44	44	44	44
Administrative Sites								
FS Owned (Number)	23			20	20	20	20	20
Leased (Number)	5			3	3	3	3	3
TOTAL BUDGET (MM \$)	187	1967		24 4	27 9	34 4	38 7	40 4
TOTAL COST (MM \$)	193			25 9	29 7	36 7	41 2	43 4

1/ Decade 1 is the period 1990-1999
 2/ OHV Prescription Categories
 3/ DRO = Designated Routes Only = Restricted
 4/ Potential yield from standard, special and marginal components
 5/ Excluding exchange

ALTERNATIVE NMK (Nonmarket)

1. Theme

Achieve high output levels of amenity (nonmarket) resources with commodity (market) outputs at a production level that will not result in environmental degradation.

Emphasize amenity resources, such as fish and wildlife, water quality, and recreation. Resolve in favor of the amenity resources any conflicts with market resources

Specific issues emphasized are (#7) water, (#8) recreation, and (#9) fish and wildlife habitat

2. Resource Program Direction

- a. Recreation. Maintain existing public recreation and interpretive facilities and programs. Provide additional developed and dispersed facilities for Special Interest Areas and other amenity resources.

Continue existing private recreation facilities operated under special-use permit. Expand or issue new permits when consistent with amenity values. Continue existing downhill ski facilities under special-use permit. Expand or develop new ski and recreation facilities to meet demand where other amenity values are not reduced. For example, avoid existing late successional vegetation and visually sensitive areas.

Maintain existing trail system. Expand system to distribute dispersed recreation visitors and to access wilderness, semi-primitive nonmotorized (SPNM) areas, and Special Interest Areas.

Manage land surrounding major reservoirs for water-oriented recreation

Maintain or increase semi-primitive nonmotorized acres of the Recreation Opportunity Spectrum. Manage the following roadless areas released by the California Wilderness Act for dispersed SPNM recreation: North Fork American River, East Yuba, West Yuba, Duncan Canyon, Castle Peak, Grouse Lakes, North Fork Middle Fork American River, Lakes, Middle Yuba, North Lafayette, and Bald Mountain, for a total of about 151,000 acres. Provide about 1,300 acres of SPM dispersed recreation opportunities

Emphasize interpretation of significant cultural resources and encourage their scientific study.

Permit OHV use when amenity resource values are not reduced.

Use small clearcut openings no larger than three acres to result in more acres meeting retention and partial retention **VQOs** than any other alternative.

On sensitivity level 1 roads, allow harvest units right up to the road. Because of the small size of openings, **VQOs** would range from modification to retention. On scenic highways, the **VQO** would range from partial retention to retention in the middleground. Improve existing visual conditions on mountain top electronic **sites** by screening or other methods.

- b. Research Natural Area. Recommend to the Chief the establishment of Babbitt Peak (1,061 acres), Sugar Pine Point (625 acres), Basin Peak (60 acres), Mt. Lola (498 acres), and Lyon Peak/Needle Lake (700 acres) as RNA's.

- c. Special Interest Areas. The following **SIA's** are established: Placer County Big Tree Grove (346 acres), Devils Postpile (69 acres), Glacier Meadow (84 acres), Grouse Falls (220 acres), Hawley Lake (5,323 acres), Meadow Lake (58 acres), Boca (1,976 acres), Kyburz (1,097 acres), Sagehen Headwaters (79 acres), Sierra Buttes (1,827 acres), Little Truckee River Terrace (468 acres), Sagehen Creek Basin (8,373 acres), Independence Lake (81 acres), Headwaters Basin of the North Fork American River (9,381 acres), San Juan Ridge (6,541 acres), Macklin Creek (380 acres), and Mason Fen (30 acres)

- d. Wilderness. Manage Granite Chief as wilderness (18,705 acres).
- e. Fish and Wildlife. Use the recovery and management plans as guides for managing bald eagles, peregrine falcons, and Lahontan cutthroat trout. Provide a network of 40 spotted owl habitat management areas. Maintain viable populations of all local fish and wildlife species. Provide additional attention to Forest Service sensitive species, State-listed threatened and endangered species, harvest species, State 'Species of Special Concern', and species groups associated with important wildlife habitats.
- f. Forest Pests. Implement a moderate level of integrated pest management over a small forested acreage suitable for timber production. Pesticides will be utilized only after all other methods have been tried and have failed and then only in the direst of emergencies. The use of conventional pesticides of unknown toxicity is prohibited. The use of the only more recently developed behavioral chemicals such as pheromones, attractants, repellants, confusants, and inhibitors is allowed.
- g. Range. Manage range resources consistent with late successional vegetation. Implement extensive range management practices on the remaining permanent range acres. Reduce the grazing program over five decades to about 1,000 AUM's.
- h. Timber. Limit opening size to three acres to maintain growth and maximize edge effect. Rotations will be at least 70 years. Timber yield calculations are based upon the nondeclining even-flow timber policy. At least 50 percent of the volume harvested would result from group selection management.
- i. Water and **Soil**. Maximize water quality improvement. Rehabilitate all treatable sediment producing areas (treat 2,500 acres).
- j. Minerals. Propose withdrawing areas from mineral entry and leasing where mining activities would conflict with amenity protection and improvement. In particular, propose withdrawing areas within 400 feet of designated or eligible State scenic highways, RNA's and **SIA's**, and areas of concentrated public use. Permit mineral development on acquired land only if this use would not conflict with protection of amenity values.
- k. Landownership and Special Uses. Emphasize acquisition of private land within the Granite Chief Wilderness, SPNM areas, and RNAs and SIA's where it would enhance amenity values. No SPNM land would be available for exchange.

Continue existing activities operated under special-use permits, and expand or issue new permits when compatible with amenity values. Work with special-use permittees as opportunities arise to mitigate possible conflicts between special uses and amenity values.
- l. Facilities. Develop, construct, and maintain access to facilities where roads and trails would be compatible with the overall amenity objectives. Close existing roads and trails conflicting with amenity objectives. Permit new road and trail construction and reconstruction where access would be needed to use the amenity resources or to achieve other objectives of this alternative. Maintain or improve trailheads and other features to facilitate use of the Granite Chief Wilderness, the North Fork American Wild River, SPNM areas, SIA's, etc.

Maintain facilities at building investment level II; protect Government investment of existing facilities.
- m. Fire Management. Emphasize all small engines and hand crews. Continue fuel treatment at present or greater levels using both engine and hand crews. The specific program organization would consist of the following:
 - o Prevention and detection (40 percent).
 - o Suppression (60 percent).

- n. **Riparian/SMZ.** Apply the Forest requirement (S&G's 46 and 47 and Appendix F) for riparian areas/SMZ's. Timber harvest scheduled from variable width SMZ's (minimum of 100 feet) along perennial streams would be minimal. Scheduled timber yields are also reduced within variable width SMZ's adjacent to intermittent streams where needed to protect channels and water quality.
- o. **Diversity.** Provide a minimum of 15 snags per acre in all eastside timber compartments. Establish a goal of 20 snags per acre for westside compartments. Maintain at least 30 sq ft basal area in hardwoods per acre in hardwood-conifer mixed stands. Retain at least 5 sq. ft. basal area in mixed-conifer stands. Retain all existing late seral stage stands

3. The Environment to be Created

Timber harvesting, reforestation, timber stand improvement, and range practices would produce a forest of greater diversity than currently exists.

The major change in vegetation by the year 2030 would be the replacement of a portion of existing timber stands by even-age young growth conifer stands. This alternative would have about 156,080 acres, or 23 percent of the existing forested land, of new timber stands less than 50 years old. The understory vegetation in these plantations would feature a combination of light densities of brush intermingled with small amounts of slash and natural fuels.

About 151,400 acres would be managed for timber on a short rotation (50-120 years). This timber management approach would result in a mosaic of very small, even-aged timber stands that differ by 10-year age classes. The larger trees would be 18 to 27 inches in diameter. The ground fuels would be scattered brush and light slash. This forested pattern would exist in areas of intensive timber management to create and maintain a regulated forest.

Long rotation (150+ years) even-aged timber management would be applied to about 121,600 acres. This timber management approach would result in a mosaic of very small even-aged timber stands. The larger trees would be 30 to 40 inches in diameter. The ground fuels would be an accumulation of moderate slash and natural fuels with patches of mature brush. This forested pattern would exist in areas emphasizing late successional wildlife habitats and scenic quality (partial retention initial **VQO's**) and would be intermixed with areas of short-rotation harvest. The future condition of special management areas, such as streamside management zones, scenic areas, unroaded areas, and noncommercial conifer stands, would most likely be very similar to the existing irregular uneven-aged timber stand structure. About 177,300 acres would reflect this forested condition.

There are 18,705 acres of wilderness; 2,944 acres would be managed as RNA's and 36,333 acres managed as **SIA's**.

The arterial and collector transportation system would remain unchanged. Local roads would access timber stands outside unroaded areas. The trail system would be in place to facilitate management of wilderness, SPNM areas, and Special Interest Areas. Existing downhill ski facilities would be expanded, and new ski facilities developed to meet demand where amenity values would be maintained. No expansion or development would be permitted in areas of late successional vegetation or Mt. Lola. Additional developed and dispersed recreation facilities would be provided in **SIA's** or where compatible with amenity values.

The visual quality of the Forest would reflect an older stand condition with less visual landscape modification than is currently evident. Almost all areas commonly seen by Forest visitors would be natural or mostly natural in appearance. Most major modifications in visible locations would be rehabilitated to at least a somewhat natural state.

Wildlife species composition would shift from species adapted to early and mid-successional vegetation to species requiring older, mature forest habitat. Riparian areas and SMZ's would receive a high level of protection. Water quality would remain similar to current conditions.

Forage for 900 head of cattle and sheep would be provided with extensive management of the permanent range acres.

TABLE 2.9 - ALTERNATIVE NMK AVERAGE ANNUAL OUTPUTS BY DECADE

RESOURCE ELEMENT	EASE YEAR			1980 RPA GOALS FOR				
	1982	1990	2030	1	2	3	4	5
RECREATION								
Developed Public (MRVD)	1,388	1,850	2,800	1,976	2,393	2,784	3,129	3,318
Developed Ski (MRVD)	210			292	379	492	639	734
Dispersed (MRVD)	2,306	2,550	3,250	2,925	3,436	3,944	4,452	4,960
Wilderness (MRVD)	0			55	55	55	55	55
Useable OHV (Miles) 2/								
0 - Closed	819			483	527	575	578	581
1 - Open	747			552	603	658	662	665
2 - DRO Summer/Open Over Snow				971	1,060	1,156	1,163	1,169
3 - DRO 3/	1,344			172	188	205	206	207
4 - DRO Summer/Closed Over Snow				16	17	19	19	19
5 - Closed Summers - Open Over Snow				42	46	50	50	50
6 - DRO - Closed 11/16 to 4/30				186	203	221	222	223
Unuseable OHV (Miles)				7M)	830	906	911	916
Visual Quality Index	52 0	51 5	51 5	51	50	49 7	495	493
WILDLIFE AND FISH								
Peregrine Falcon (pairs)	0	3	3	3	3	3	3	3
Bald Eagle (pairs)	0	5	5	5	5	5	5	5
Deer (animals)	13,000	16,000	16,000	13,000	13,000	13,000	12,100	11,800
Spotted Owls (pairs)	110	110	82	100	96	91	86	82
Goshawk (territories)	75	75	80	75	75	75	78	80
Wildlife User Days (MWFUD)	1058			1193	1196	1186	1178	1181
Fish User Days (MWFUD)	902			1016	1019	101 1	1004	1006
Direct Habitat Improvement								
Deer (MWFUD)	3 1			3 6	3 6	3 6	3 5	3 5
Other Wildlife Species (Except T&E) (MWFUD)	2 0			2 4	2 4	2 4	2 4	2 4
Fish (Except T&E) (MWFUD)	0 5			0 6	0 6	0 6	0 6	0 6
Induced Habitat Improvement								
Deer (MWFUD)	61 5			67 4	67 8	67 4	67 0	66 9
Other Wildlife Species (Except T&E) (MWFUD)	41 0			44 9	45 2	44 9	44 7	44 6
Fish (Except T&E) (MWFUD)	5 4			6 1	6 1	6 1	6 0	6 0
Direct Habitat Improvement								
Wildlife (Acres)	1,000			2,000	2,000	2,000	2,000	2,000
Fish (Acres)	120			80	80	80	80	80
RANGE								
Grazing (M AUM)	20 0	185	304	9 0	7 0	5 0	3 0	1 0
TIMBER								
Allowable Sale Quantity (MMEF) 4/	1942	1942	1942	1049	1049	1049	1049	1049
Allowable Sale Quantity (MMCF)	29 9	29 9	29 9	162	162	162	162	163
TSY (MMBF)				1103	1103	1103	1103	1103
TSY (MMCF)				170	170	170	170	170
Reforestation (Acres)	1,450	4,134	4,823	4,930	3,989	2,617	2,018	2,056
Timber Stand Improvement (Acres)	2,596	3,564	3,634	12,516	3,363	1,059	5,875	9,195

TABLE 2.9 - ALTERNATIVE NMK AVERAGE ANNUAL OUTPUTS BY DECADE (Continued)

RESOURCE ELEMENT	BASE YEAR		1980 RPA GOALS FOR			DECADES1/			
	1982	1990	2030	1	2	3	4	5	
WOOD PRODUCTS OTHER THAN SAWTIMBER									
Fuelwood (Cords)	28,000			16,094	18,747	19,696	21,309	22,669	
Biomass (MMCF)				26	23	24	25	28	
WATER									
Quality (MM Ac.Ft. at Standards)	1 96	198	201	207	205	210	211	209	
Increased Quantity (M Ac.Ft.)				93	73	116	129	113	
Watershed Improvement (Acres)	120	270	310	100	90	60	0	0	
LANDS AND MINERALS									
Minerals (Plans of Operation)	150	173	222	150	200	200	200	300	
Land Acquisition (Acres)	2,300 5/	3,000	0	2,000	2,000	2,000	2,000	2,000	
HUMAN RESOURCES									
Programs (Enrollees)	31	140	140	140	140	140	140	140	
FIRE									
Fuel Treatment (Acres)	4, m	2,800	2,600	2,100	3,200	2,500	2,000	1,500	
Expected Acres Burned by Wildfire Intensity Level									
1	20	N/A	N/A	14	18	25	31	34	
2	73			50	63	87	109	120	
3	94			64	81	112	140	154	
4	219			150	189	262	326	359	
5	404			278	351	487	605	665	
6	228			157	198	275	341	376	
Total	1,038			713	900	1,248	1,552	1,708	
TRANSPORTATION									
Trail Const./Reconst. (Miles)	23 0	140	130	7 2	20 6	20 6	20 6	0 8	
Road Const./Reconst. (Miles)	99 1	NA	NA	63	43	40	40	40	
Road Maintenance (Miles)	2,403			2,516	2,643	2,655	2,655	2,655	
FACILITIES									
Dams and Reservoirs									
F.S (Number)	24	NA	NA	24	24	24	24	24	
Other Federal (Number)	5			5	5	5	5	5	
Other State/Local (Number)	38			37	37	37	37	37	
Private (Number)	55			44	44	44	44	44	
Administrative Sites									
F.S Owned (Number)	23			20	20	20	20	20	
Leased (Number)	5			3	3	3	3	3	
TOTAL BUDGET (MM\$)	187	1967	22 06	22 2	23 6	25 9	28 9	32 4	
TOTAL COST (MM\$)	193			23 7	25 3	28 0	31 3	35 0	

1/ Decade 1 is the period 1990-1999
 2/ OHV Prescription Categories
 3/ DRO = Designated Routes Only = Restricted
 4/ Potential yield from standard, special and marginal components
 5/ Excluding exchange

ALTERNATIVE UNE (Uneven-aged)

1. Theme

Achieve a broad range of commodity and amenity benefits that meet short-term needs while retaining long-range management options; apply uneven-age management as the principal method for regulating lands suitable for timber production

Emphasize a mixture of commodity production and amenity benefits that maximizes net public benefits while responding to the planning issues

Specific issues emphasized are (#6) forage, wood and soils; (#8) recreation; and (#9) fish and wildlife habitat.

2 Resource Program Direction

- a. Recreation. Provide a program of developed (including downhill skiing) and dispersed recreation which would meet projected demand by expanding existing facilities before developing new facilities. Expand visitor information service and interpretive facilities and programs.

Manage land surrounding major reservoirs for water-oriented recreation. Manage Grouse Lakes as a motor vehicle closure area. Provide 74,000 acres of SPNM and 71,000 acres of SPM dispersed recreation opportunities.

Expand opportunities for the private sector to operate campgrounds under special-use permit. Develop and manage at full standard the following potential recreation sites: Boca, Prosser, Stampede, French Meadows, Jackson Meadow, Sugar Pine, and Bullards Bar Reservoirs; Truckee and North Yuba Rivers areas: Sierra Buttes; and Interstate Highway 80 area. All other potential recreation sites would be available for other multiple uses during the first decade.

Develop trail systems to accommodate motorized and nonmotorized recreation use, including use by the disabled. Provide designated routes for off-highway vehicle use in dispersed recreation areas.

Provide for cultural resource interpretation when planning for recreation facilities.

Manage for visual quality objectives (VQOs) of retention and partial retention along most major recreation roads and trails and around major recreation areas. Outside of the more visually sensitive areas, establish visual quality direction which would be compatible with the use of the timber resource. Emphasize visual qualities along major access roads, the North Fork American Wild River, the Granite Chief Wilderness, SPM and SPNM areas, and in concentrated recreation use areas.

- b. Research Natural Areas. Recommend to the Chief the establishment of Babbitt Peak (1,061 acres), Sugar Pine Point (625 acres), and Lyon Peak/Needle Lake (700 acres) as RNA's.
- c. Special interest Areas. The following SIA's are established Placer County Big Tree Grove (346 acres), Devils Postpile (69 acres), Glacier Meadow (84 acres), Grouse Falls (220 acres), Sagehen Headwaters (79 acres), Meadow Lake (58 acres), and Mason Fen (30 acres)
- d. Wilderness. Manage Granite Chief as wilderness (18,705 acres).
- e. Fish and Wildlife. Use the species recovery and management plans as guides for managing Federal threatened and endangered species. Manage a network of 33 spotted owl habitat management areas. Maintain viable populations of all local fish and wildlife species. Give additional attention to Forest Service sensitive species, State-listed threatened and endangered species, harvest species, State 'Species of Special Concern', and species groups associated with important wildlife habitats

- f. Forest Pests. Implement a high level of integrated pest management over a moderate forested acreage suitable for timber production
- g. Range. On about **75** percent of the capable, available, and suitable permanent range, implement range improvement practices such as seeding, fencing, and water developments to facilitate improved grazing systems such as deferred grazing and rest rotation. On the transitory range, implement vegetative management practices in harmony with other resource objectives and needs on the existing and potential forage created by timber management practices, both inside and outside of existing allotments, by developing new and improved grazing systems and techniques. Study range management practices on low-slope eastside pine lands that would improve vegetation condition and maintain **site** productivity in a dual-use management setting
- h. Timber. Apply intensive timber management practices to forest lands scheduled for high timber yields. On all land capable, available, and suitable for timber production, obtain timber yields while maintaining other resource values. Timber yield calculations are based upon the nondeclining even-flow timber policy. The uneven-age silvicultural system would be the principal method for regulating lands suitable for timber production. Apply even-age management (shelterwood) where uneven-age management is not feasible, such as cable ground
- i. Water and **Soil**. Maintain water quality at existing levels. Restore water quality on **1,900** acres of stream channels, meadows, roads, old wildfire areas, and priority hydraulic diggings
- j. Minerals. The Granite Chief Wilderness is withdrawn from all forms of mineral entry and leasing. Propose withdrawing from mineral entry the RNA's and **SIA's**, areas of concentrated public use (including potential recreation sites), areas along portions of designated or eligible State scenic highways not previously withdrawn (200 feet from centerline along Highways 20, **49**, and **89** and approximately 400 feet on each side of Interstate 80), and areas 200 feet from centerline of the Gold Lake Highway.
- k. Land Ownership and Special Uses. Acquire private land within the Granite Chief Wilderness. Use selected National Forest System lands to acquire other lands which would enhance Tahoe National Forest management

Designate and manage the Donner Pass area as a utility corridor, and designate the Galloway site as an electronic site. The Granite Chief Wilderness, North Fork American Wild River, Special Interest and Research Natural Areas are excluded from consideration for utility corridors.

- l. Facilities. Construct and maintain roads to access areas suitable for resource management. Maintain facilities at building investment level III; provide for improvement and replacement of existing facilities.
- m. Fire Management. Emphasize all small engines and hand crews. Continue **fuel** treatment at present or greater levels using both engine and hand crews. Specific program organization would consist of:
 - o Prevention and detection (**40** percent).
 - o Suppression, including fuel management (60 percent)
- n. **Riparian/SMZ**. Apply the Forest requirement (**S&G's 46** and **47** and Appendix F) for riparian areas/SMZ's. Timber harvest scheduled from variable width SMZ's (minimum of **100** feet) along perennial streams would be minimal. Scheduled timber yields are also reduced within variable width SMZ's adjacent to intermittent streams where needed to protect channels and water quality.
- o. **Diversity**. Provide a minimum of **1.5** snags per acre in all planning compartments. Maintain hardwoods with at least 30 sq. ft. per acre basal area in hardwood-conifer mixed stands. Also maintain at least **5** sq. ft. per acre in mixed-conifer stands

3. The Environment to be Created

Timber harvesting, reforestation, timber stand improvement, range practices, and wildlife habitat improvement would produce a forest of greater diversity than currently exists

The major change in vegetation by the year 2030 would be the replacement of a portion of the existing timber stands by even-age young growth conifer stands. This alternative would have about 98,340 acres, or 14 percent of the existing forest land, of new timber stands less than 50 years old. The understory vegetation in these plantations would feature a combination of light densities of brush intermingled with small amounts of slash and natural fuels.

About 127,200 acres would be managed for timber on a short rotation (50-120 years). This timber management approach would result in a mosaic of similar sized, even-aged timber stands that differ by 10-year age classes. The larger trees would be 18 to 27 inches in diameter. The ground fuels would be scattered brush and light slash. This forested pattern would exist in areas of intensive timber management to create and maintain a regulated forest.

Long rotation (150+ years) even-aged timber management would be applied to about 96,800 acres. Long rotations are necessary to meet the partial retention **VQOs**. This timber management approach would result in a mosaic of even-aged timber stands. The larger trees would be 30 to 40 inches in diameter. The ground fuels would be an accumulation of moderate slash and natural fuels with patches of mature brush. This forested pattern would exist in areas emphasizing late successional wildlife habitats and scenic quality. This forested pattern would also be intermixed with areas of short-rotation harvest.

Uneven-age timber management would be applied to about 95,700 acres of tractor-loggable land. This would result in a mixture of tree ages and sizes within these stands. Tree species would tend to be shade tolerants such as white fir and incense-cedar.

The future condition of special management areas, such as streamside management zones, scenic areas, unroaded areas, and noncommercial conifer stands, would most likely be very similar to the existing irregular uneven-aged timber stand structure. Approximately 208,800 acres would reflect this forested condition.

There are 18,705 acres of wilderness; 2,386 acres would be managed as Research Natural Areas and 886 acres managed as Special Interest Areas.

The arterial and collector transportation system would be completed.

Existing downhill skiing facilities would be expanded to their maximum capacity. New downhill skiing facilities and key potential developed recreation **sites** would be developed in response to demand (see Resource Program Direction).

Human-caused changes in natural vegetative patterns would be more evident in the landscape than they are currently. While most highly sensitive areas adjacent to major recreation roads, trails, and use areas would remain natural or predominantly natural in appearance, less conspicuous portions of the Forest would be visually dominated by evidence of human practices.

Semi-primitive nonmotorized acres and semi-primitive motorized acres would be reduced.

Wildlife species composition would shift slightly from species requiring late successional vegetation to species adapted to early and mid-successional vegetation.

Riparian areas and **SMZ's** would receive a high level of protection. Water quality would remain similar to current conditions.

Range management would provide a vegetative management program that is geared to focus attention on sustained yield of range vegetation to protect the soil and water and provide ecological diversity. On the east side of the Sierra Nevada, 75 percent of the permanent range would be intensively managed, providing forage for 15,800 head of cattle and sheep. Transitory range among the early successional timber stands (plantations) would increase on the west side of the Sierra. Domestic livestock would be used to reduce competition to the tree seedlings while maintaining particular seral stages for specific wildlife habitat enhancement, providing forage for 5,200 head of cattle and sheep.

TABLE 2.10 -ALTERNATIVE UNE: AVERAGE ANNUAL OUTPUTS BY DECADE

RESOURCE ELEMENT	BASE YEAR		1980 FUTURE GOALS FOR		DECADES 1/				
	1982	1990	2030	1	2	3	4	5	
RECREATION									
Developed Public (MRVD)	1,388	1,850	2,800	1,976	2,393	2,784	3,129	3,318	
Developed Ski (MRVD)	210			292	379	492	639	830	
Dispersed (MRVD)	2,306	2,550	3,250	2,925	3,426	3,944	4,452	4,960	
Wilderness (MRVD)	0			55	55	55	55	55	
Useable OHV (Miles) 2/									
0 - Closed	819			88	98	106	109	113	
1 - Open	747			685	766	830	854	883	
2 - DRO Summer/Open Over Snow				1,193	1,334	1,446	1,488	1,539	
3 - DRO 3/	1,344			294	329	357	367	379	
4 - DRO Summer/Closed Over Snow				17	79	21	22	23	
5 - Closed Summers - Open Over Snow				43	48	52	54	56	
6 - DRO - Closed 11/16 to 4/30				194	217	235	242	250	
Unuseable OHV (Miles)				789	882	956	964	1,017	
Visual Quality Index	52.0	51.5	51.5	51	50	49	48	47.8	
WILDLIFE AND FISH									
Peregrine Falcon (pairs)	0	3	3	3	3	3	3	3	
Bald Eagle (pairs)	0	5	5	5	5	5	5	5	
Deer (animals)	13,000	16,000	16,000	13,300	13,600	14,500	13,900	13,000	
Spotted Owls (pairs)	110	110	74	100	94	87	80	74	
Goshawk (territories)	75	75	75	75	75	75	75	75	
Wildlife User Days (MWFUD)	1058			118.5	119.8	120.0	120.2	119.2	
Fish User Days (MWFUD)	902			101.0	102.0	102.3	102.3	101.6	
Direct Habitat Improvement									
Deer (MWFUD)	31			3.5	3.6	3.6	3.6	3.5	
Other Wildlife Species (Except T&E) (MWFUD)	2.0			2.3	2.4	2.4	2.4	2.4	
Fish (Except T&E) (MWFUD)	0.5			0.6	0.6	0.6	0.6	0.6	
Induced Habitat Improvement									
Deer (MWFUD)	61.5			66.8	67.9	88.2	67.7	67.1	
Other Wildlife Species (Except T&E) (MWFUD)	41.0			44.5	45.3	45.3	45.1	44.7	
Fish (Except T&E) (MWFUD)	5.4			6.0	6.1	6.2	6.1	6.1	
Direct Habitat Improvement									
Wildlife (Acres)	1,000			900	800	800	800	800	
Fish (Acres)	120			20	10	10	10	10	
RANGE									
Grazing (MAUM)	200	18.5	30.4	29.8	20.9	21.6	22.3	23.0	
TIMBER									
Allowable Sale Quantity (MMBF) 4/	1942	1942	1942	110.8	114.4	114.4	114.4	114.4	
Allowable Sale Quantity (MMCF)	29.9	29.9	29.9	17.2	17.7	17.7	17.7	17.7	
LTSY (MMBF)				1647	1647	1647	1647	1647	
LTSY (MMCF)				253	25.3	25.3	25.3	25.3	
Reforestation (Acres)	1,450	4,134	4,823	3,343	3,678	3,960	3,670	3,394	
Timber Stand Improvement (Acres)	2,596	3,564	3,634	12,516	3,431	1,828	5,399	8,278	

TABLE 2.10 - ALTERNATIVE UNE: AVERAGE ANNUAL OUTPUTS BY DECADE (Continued)

RESOURCE ELEMENT	BASE YEAR			1980 RPA GOALS FOR DECADES ^{1/}				
	1982	1990	2030	1	2	3	4	5
WOOD PRODUCTS OTHER THAN SAWTIMBER Fuelwood (Cords) Biomass (MMCF)	28,000			16,075 2 8	17,776 2 9	18,574 2 9	19,663 3 0	20,450 3.1
WATER Quality (MMAc.Ft at Standards) Increased Quantity (M Ac Ft) Watershed Improvement (Acres)	1 96 120	1 98 270	2 01 310	2 07 96 100	2 06 79 90	2 09 113 0	2 11 134 0	2 10 120 0
LANDS AND MINERALS Minerals (Plans of Operation) Land Acquisition (Acres)	150 2,300 5/	173 3,000	222 a	150 500	200 500	200 500	200 500	300 500
HUMAN RESOURCES Programs (Enrollees)	31	140	140	140	140	140	140	140
FIRE Fuel Treatment (Acres) Expected Acres Burned by Wildfire Intensity Level		2,800	2,600	2,000	2,100	3,200	1,100	1,400
1			N/A	14	28	25	31	38
2	73			50	97	88	108	133
3	94			65	124	113	139	171
4	219			150	290	264	324	399
5	404			279	537	491	601	742
6	228			157	304	277	339	418
Total	1,038			715	1,380	1,258	1,542	1,901
TRANSPORTATION Trail Const./Reconst (Miles) Road Const./Reconst (Miles) Road Maintenance (Miles)	23 0 99.1 2,403	140 NA	130 NA	7 2 73 2,536	20 6 49 2,687	20 6 46 2,703	20 6 46 2,703	0 8 46 2,703
FACILITIES Dams and Reservoirs FS (Number) Other Federal (Number) Other State/Local (Number) Private (Number) Administrative Sites FS Owned (Number) Leased (Number)	24 5 38 55 23 5	NA	NA	24 5 37 44 20 3	24 5 37 44 20 3	24 5 37 44 20 3	24 5 37 44 20 3	24 5 37 44 20 3
TOTAL BUDGET (MM \$)	18 7	19 67	22.06	21 3	23 9	28 6	32 9	35 1
TOTAL COST (MM \$)	19 3			22 8	26 2	30 7	35 3	37 9

^{1/} Decade 1 is the period 1990-1999

^{2/} OHV Prescription Categories

^{3/} DRO = Designated Routes Only = Restricted

^{4/} Potential yield from standard, special, and marginal components

^{5/} Excluding exchange

F. COMPARISON OF ALTERNATIVES

OVERVIEW

This section compares and highlights major differences among alternatives regarding outputs, costs, responses to issues, and environmental effects. These factors are summarized here from detailed discussions in Chapters 3 and 4. These comparisons present relevant, specific, and detailed information previously expressed in more general terms in the alternative descriptions. Included are the following:

- o A narrative comparison of major differences among alternatives
- o A comparison of acres assigned to each management prescription (Table 2.11)
- o A comparison of average annual outputs for first and fifth decades (Tables 2.12 and 2.13).
- o A comparison of Research Natural Areas and Special Interest Areas (Table 2.14).
- o A comparison of land classified for timber management (Table 2.15a)
- o A comparison of acres by silviculture practice (Table 2.15b).
- o A summary comparison of economic effects (Table 2.16).
- o A comparison of present net value and tradeoffs (Tables 2.17, 2.18, 2.19, and 2.20, and Figure 2.21)
- o A comparison of issue resolution by alternative (Table 2.21)

MAJOR DIFFERENCES AMONG ALTERNATIVES

The following discussion highlights the major differences between the alternatives considered in detail. Refer to Table 2.11 for comparative acreage allocated by management prescription, and Tables 2.12 and 2.13 for comparisons of the average annual outputs by alternative for the first and fifth decades.

Social

The social benefits provided by each alternative cannot be measured or compared in terms of one being better, worse, higher, or lower than another because different social groups are affected differently by each alternative. For example, the long-time resident group generally benefit most from Alternative CMD and least from Alternative NMK, Alternative PRF is relatively high in opportunities for this group. The alternative lifestyle resident group would benefit most from Alternative NMK and least from Alternative CMD, Alternative PRF is low in opportunities for this group. Native Americans would benefit more from those alternatives with increased commodity production because a majority are employed in the timber industry; however, these alternatives would also increase the risk of loss or damage to Native American cultural resource sites.

Economic

Alternatives CMD and RPA would have the highest present net value with CMD returning slightly more to the Federal treasury (including payments to local governments) in the first decade. Alternative PRF would have the fourth highest present net value and return to the Federal treasury. Alternative NMK would have the lowest present net value and return to the Federal treasury. (See Figure 2.1)

Alternative CMD would provide the greatest employment opportunities. with Alternative PRF the fourth highest. The number of Forest Service employees (full-time equivalents) required for TNF administration in the first decade ranks highest for Alternative RPA, fifth highest for Alternative PRF, and lowest for Alternative CUR.

Alternatives CMD and RPA would require the greatest budgets for implementation, about **\$24.4** and **\$24.3** million per year, respectively, for the first decade. Alternative PRF ranks fourth, with a projected budget of **\$21.2** million. Alternative CUR, which has a constrained budget, would have the lowest budget of \$20.1 million. These budgets include appropriated funds and funds for brush disposal, reforestation, and timber stand improvement.

Diversity

The alternatives differ considerably in overall seral stage diversity and management of important diversity elements

Several alternatives (PRF, CUR, RPA, and CMD) provide extensive use of even-age silvicultural systems. These alternatives would produce shifts in overall seral stage diversity and the abundance of early stages (1X, 2X, 3A, 3B/C) would increase substantially over current conditions. These alternatives would produce 50 to 60 percent reductions in mature and overmature forest stands by the fifth decade. The UNE alternative would produce about a 35-percent reduction in the current inventory of mature and overmature seral stages. The NMK alternative would maintain the current acreage of mature and overmature forest, it would yield fewer early seral stage stands than the other alternatives.

The PRF, NMK, and UNE alternatives provide the most extensive programs for managing important diversity elements such as hardwoods, meadow edges, riparian areas, and snags. The CUR and RPA alternatives would offer moderate programs of management and the CMD alternative would yield the least protection.

Facilities

Alternatives CUR and CMD would develop the most access within the TNF during the planning period by reconstructing existing and constructing new arterial, collector, and local transportation systems. Alternatives NMK and PRF would develop the least access. Alternatives UNE and RPA would access a moderate amount of area to provide for the commodity and recreational program.

Under all alternatives miles of road open or closed to use would remain about the same. Seasonally restricted road miles would vary by alternative. The location of roads open, closed, or seasonally restricted would vary by each alternative's emphasis. Common to all alternatives is the assumption that there will always be a need to construct some new roads. This would be true even after the second and third decades, when the Forest transportation system would be essentially completed. However, the number of miles constructed would be very low. Also, in the long term, there would probably be a net decrease in the total miles in the Forest transportation system. This is due to closing existing roads, and the roads that would be constructed would be of a lower standard and would be closed after use.

Alternatives PRF, RPA, CMD, NMK, and UNE would build the most miles (approximately 700 miles) of trail for dispersed recreation. The CUR alternative would construct and reconstruct the least trail miles (approximately 550 miles). The estimated miles are based on the end of the fifth decade projected information.

Fire and Fuels

Net resource losses from wildfire would increase over time under Alternative CUR, in which detection, prevention, and suppression would be limited by constrained fire management programs and budgets. Under all other alternatives the net wildfire losses would remain relatively unchanged.

Decade by decade, Alternative CUR would have more acres burned annually by wildfire than any other alternative. In all alternatives, except CUR, the fire management program emphasis would shift from a mix of large and small engines to all small engines and hand crews, and budgets would increase by **20** percent in the third, fourth, and fifth decades.

Fish and Wildlife

Each alternative would provide a habitat management program for fish and wildlife. However, the focus of the programs would vary among alternatives.

All fish and wildlife programs would employ recovery and management plans as direction for managing Federal threatened and endangered species. Each program would also meet the 'Minimum Management Requirements' for diversity and viable population management as prescribed in the Regional Planning Guide.

The PRF, NMK, and UNE alternatives would provide a fish and wildlife program that emphasizes Forest Service sensitive species, State-listed threatened and endangered species, harvest species, and species groups associated with important wildlife habitats. The PRF and NMK alternatives would also include the State 'Species of Special Concern' in the fish and wildlife program. The CUR, RPA, and CMD alternatives would provide a fish and wildlife program that focused on threatened and endangered, Forest Service sensitive, and harvest species. The RPA program would also include cavity nesting animals.

The fish and wildlife habitat program in the PRF, NMK, and UNE alternatives would emphasize protection of important habitat diversity elements including snags, riparian areas, meadows, hardwoods, and down woody material. In addition, the NMK alternative would not allow harvest of existing candidate old-growth forest stands over time. The CUR, RPA, and CMD alternatives would provide considerably less protection to snags, riparian areas, hardwoods, down woody material, and old-growth forest than the PRF, NMK, and UNE. Accordingly, the CUR, RPA, and CMD alternatives would provide poorer conditions for fish and wildlife associated with important habitat diversity elements.

Historical and Cultural Resources

All alternatives would meet minimum legal requirements. Interpretation and enhancement of cultural resources are emphasized in Alternatives PRF and UNE. The NMK alternative emphasizes conservation of cultural resources. All alternatives require additional non-project related inventories to meet the RPA goal of a complete Forest inventory by 1995.

While cultural resources are afforded protection by law, the likelihood of disturbance by management activities by increasing access or by increasing visitor use of the Forest would vary among the alternatives. The CMD alternative, which emphasizes timber management activities and roading, would create an overall high threat to cultural resources. The PRF, CUR, RPA, NMK, and UNE alternatives would create a moderate threat to cultural resources.

Lands and Urban/Rural/Wildland Interface

The acreage in the land acquisition program would not vary much by alternative. The emphasis on the type of property acquired would be dictated generally by the objectives of the alternative. Alternatives NMK, PRF, and UNE, which recommend more semi-primitive nonmotorized recreation areas, motor vehicle closure areas, and Special Interest Areas containing private land, would require the most direct acquisition.

Property boundaries need to be established because of the timber sale program. About two-thirds of the landline location would follow the scheduled timber outputs for the first two decades. Therefore, alternatives stressing timber production (Alternatives CMD, RPA, and PRF) would have the greatest number of landline miles to post and mark per year in the first decade. All alternatives would complete the landline program by 2020.

Special-use applications would not vary much among alternatives. Alternatives with more proposed semi-primitive nonmotorized recreation areas, Research Natural Areas, and Special Interest Areas would tend to discourage applications in those particular areas, but the overall number of special-use applications would not change significantly.

The Forest's ability to respond to public concerns relevant to urban/rural wildland interface situations varies by alternative. The CMD, RPA, and CUR alternatives are the least responsive because the higher levels of timber harvesting would create larger openings more often in interface situations, and there would be less flexibility in rearranging units once proposed. The PRF, UNE, and NMK alternatives would respond moderately, fairly responsive, and most responsive, respectively. These three alternatives have from moderate to high opportunities to manage timber in interface situations with small and less apparent openings that could respond to many of the public concerns.

Minerals

Alternative NMK proposes the greatest number of acres of high mineral potential proposed for withdrawal from mineral entry and leasing. Overall, the total acres of mineral withdrawal would correspond to the acres recommended for scenic highways, concentrated public use, Research Natural Areas, and Special Interest Areas. The Placer County Big Tree Grove SIA is already withdrawn. Alternatives NMK, UNE, RPA, and PRF (in descending order) would have the largest amount recommended for withdrawal, while Alternatives CMD and CUR would have the fewest acres recommended.

Alternatives with more acres withdrawn would reduce opportunities to explore and develop the mineral resource.

Range

The average annual permitted AUM outputs for Alternatives PRF and UNE would be **less** than 1 percent above the current level's average over the five decades. The average annual permitted AUM outputs for Alternative CMD would be about 6 percent above the current level's average over the five decades. These increases would be achieved through intensively managing 75 percent of the permanent range (compared to 25 percent under the current level) and intensively managing 12,556 acres of scattered eastside pine stands.

The average annual permitted AUM output for Alternative RPA would be 52 percent above the current level's average over the five decades. This increase would be achieved through intensively managing 80 percent of the permanent range and converting 26,709 acres of low-site brush to intensive management.

The average annual permitted AUM outputs for Alternative NMK would be about 77 percent below the current level's average over the five decades. Range would be extensively managed in this alternative.

Alternative RPA would exceed the Regional Forester's allocated 2030 RPA goal of 30,400 AUM's. Alternatives PRF and UNE would achieve 33 percent of the 2030 goal. Alternative CMD would achieve 77 percent of the 2030 goal. The remaining alternatives did not attempt to meet the 2030 goal.

Recreation

- a. **Developed Recreation.** All alternatives would meet projected demand for developed recreation through the first decade. The PRF, CMD, NMK, and UNE alternatives would meet demand over the entire planning period through expansion of existing sites and construction of new ones at key locations along major travel routes, reservoirs, and rivers. The RPA alternative would meet about 90 percent of demand after the first decade. The CUR alternative would not construct any new developed recreation facilities: by the fifth decade only 65 percent of developed recreation demand would be met.
- b. **Developed Recreation Ski Areas.** The PRF, CUR, and UNE alternatives would both expand existing and develop new downhill ski areas to meet projected demand over the planning period. The CMD alternative would encourage the expansion of existing ski areas to their maximum capacity first, and would allow enough new site expansion to meet demand in the fifth decade: those sites with high timber values would be avoided. These alternatives would provide the most opportunity for downhill ski recreation. The NMK alternative would restrict ski area expansion to areas outside of late successional, mature forest types, and Mt. Lola, and would meet 88 percent of the projected demand for downhill ski recreation in the fifth decade. Alternative RPA would meet demand through the fourth decade and meet 88 percent of demand in the fifth decade.
- c. **Dispersed Recreation.** All alternatives would meet overall dispersed recreation demand because of the TNF's large capacity for dispersed recreation activities. Each alternative, however, emphasizes certain management activities differently than others. Opportunities for some types of dispersed recreation may be limited in some alternatives. In all alternatives except the NMK alternative, semi-primitive nonmotorized recreation opportunities would diminish because road access would increase throughout much of the Forest and because vegetation management activities would expand into areas currently natural-appearing.

In all alternatives, sufficient acres to meet projected dispersed recreation demand for activities requiring unroaded, near-natural settings would not be available

Similarly, in all alternatives opportunities for motorized recreation that require primitive roads and near-natural settings would be reduced from the current situation. The PRF and UNE alternatives would provide a little less than ~~two~~ thirds of the acres available for SPM recreation. The CUR and CMD alternatives would provide about **40** percent of the acres, and the NMK and RPA alternatives would provide less than **15** percent of the acres available for SPM recreation opportunities. In all alternatives, opportunities would increase for activities that benefit from improved road access (such as hunting, fishing, driving for pleasure, and auto camping) and that are not affected by the appearance of human-caused landscape modifications.

Research Natural Areas

Babbitt Peak Washoe Pine (**1,061** acres) is proposed under all alternatives. Sugar Pine Point (**625** acres) is proposed under Alternatives PRF, CMD, NMK, and UNE. Lyon Peak/Needle Lake (700 acres) is proposed under Alternatives PRF, UNE, and NMK. Mt. Lola (498 acres) and Basin Peak (**60** acres) are proposed under Alternative NMK.

Riparian Areas

The RPA alternative would result in the greatest potential to damage riparian areas/SMZ's and the aquatic ecosystem. The CUR and CMD alternatives would also result in high potential to adversely impact these areas. All three exhibit significant risks because of the dramatic increase in timber regeneration harvests and associated activities on steep ground.

The UNE alternative would result in the lowest potential to damage riparian areas/SMZ's and the aquatic ecosystem. The NMK and PRF alternatives would result in slightly greater risks. These three alternatives either envision smaller increases than the other alternatives in hawest-related activities on steep ground, or in the case of the NMK alternative, would result in minor disturbance associated with site preparation.

Special Interest Areas (SIA's)

Placer County Big Tree Grove Botanical Area (**346** acres) is proposed under all alternatives. Alternative NMK (17 areas, **36,333** acres) would provide the greatest number of **SIA's**, followed by Alternatives PRF, CMD, and UNE (7 areas, **886** acres. Alternatives CUR and RPA would provide no additional **SIA's**. (See Table **2.14** for the specific areas proposed.)

Soils

Alternatives CMD and RPA would have the greatest potential to reduce long-term soil productivity. The overall risk to the soil resource under these alternatives would be moderate.

The overall risk to the soil resource under Alternative CUR would be low.

Alternatives UNE and PRF would have a lower potential to reduce long-term soil productivity because they would have a lower risk of soil erosion. Under Alternative UNE steep slopes would be in shelterwood systems; under Alternative PRF fewer acres of steep slopes would be allocated to timber management. The overall risk to the soil resource under these alternatives would be low to very low.

Alternative NMK would have the lowest potential to reduce long-term soil productivity because of its special emphasis on protection of the soil resource. The overall risk to the soil resource under these alternatives would be very low.

Timber

Alternatives CUR, CMD, and RPA would provide the greatest opportunities for intensive timber management on suitable land. These alternatives would have the largest available landbases and the most intensive

management. They also would have the highest allowable sale quantities and long-term sustained yield capacities. None of the alternatives would meet the RPA goal of 194.2 MMBF in the first decade. Alternative RPA would exceed the goal in the third decade and Alternative CMD would exceed **194.2** MMBF in the fourth decade. Alternatives RPA and CUR would be the most efficient in silvicultural methods and use of the timber inventory over time. Alternatives RPA, CMD, and CUR would have the highest potential wood energy (biomass) available.

Alternatives PRF and UNE would provide lesser opportunities for timber production and biomass. They would have similar landbases for regulated timber management, but Alternative PRF would have a higher level of management intensity than Alternative UNE. Alternative UNE would have the lowest management intensity of all alternatives. Alternative PRF would have relatively efficient silvicultural methods, while Alternative UNE would be more difficult to implement because it would necessitate very small openings, multiple entries, and complicated record-keeping.

Alternative NMK would provide the least opportunities for timber production. This alternative has the smallest landbase, the second lowest management intensity, and the least efficient silvicultural methods. Similar to Alternative UNE, Alternative NMK would require small openings and cumbersome record-keeping and, thus, would be difficult to implement. Both Alternatives UNE and NMK would have high costs to achieve their timber yield.

Visual Resources

Under the CMD alternative, visual resources would be emphasized only to the extent required by the State scenic highway minimum implementation requirement, Granite Chief Wilderness, and major reservoirs. Visual quality in Alternatives PRF, CUR, RPA, CMD, NMK, and UNE would be reduced to varying degrees to allow emphasis of other resource management objectives. The CUR, RPA, and CMD alternatives would significantly reduce visual quality from the current level, with the CMD alternative having the greatest decline. This reduction would restrict the quality and quantity of recreational opportunities available in the TNF. The PRF alternative would also reduce visual quality, but to about half the extent that the previous alternatives would. The UNE alternative is about halfway between the PRF and NMK alternatives for the level of visual quality provided. The NMK alternative would reduce visual quality the least of all alternatives from current conditions. The NMK alternative would afford the greatest opportunities to maintain and enhance visual quality and would result in almost three times as many acres for the retention visual quality objective as would alternative PRF.

Water

The RPA and NMK alternatives would provide for about **2,500** acres of watershed restoration (the maximum treatable acreage) over the planning period. The PRF and UNE alternatives would provide for 1,900 acres of treatment. The CUR and CMD alternatives would treat about **500** acres.

All alternatives would result in slightly increased water yields compared with current levels because of increased regeneration cutting.

When accounting for watershed restoration and intensity of timber management and related activities, minor differences would be expected in water yield meeting water quality standards. The PRF alternative would result in a similar percent of water yield meeting standards. The RPA, CMD, and CUR alternatives would likely result in a slightly smaller percentage of water yield meeting standards. The NMK and UNE alternatives would result in a similar or slightly greater percentage of water yield meeting standards relative to the current situation.

Wilderness

- The Granite Chief Wilderness (18,705 acres) would be managed for its wilderness values under all alternatives.

ACRES IN MANAGEMENT PRESCRIPTIONS

Alternatives vary by the number of acres proposed by management prescription and by the different management prescriptions used. Not all prescriptions apply to every alternative. A management prescription represents combinations of compatible management practices, and the combination of management prescriptions for a particular alternative reveals its overall management emphasis. (See the previous discussion of management prescriptions earlier in this chapter. Also refer to the alternative maps in the packet accompanying this EIS for the spatial distribution of the management prescriptions by alternative. The relationship of management prescriptions to FORPLAN prescriptions is discussed in Appendix B.)

Table 211 displays the acres allocated to each management prescription under each alternative. The amount of each prescription applied under an alternative determines how much of a given resource output would be produced. The outputs produced reflect the emphasis of the alternative

NUMBER & THEME	PRF	CUR	RPA	CMD	NMK	UNE
1 Manage to retain the wilderness qualities	18,705	18,705	18,705	18,705	18,705	18,705
2 Retain a near-natural appearing forest environment while also producing some forage and water, manage for dispersed nonmotorized recreation	45,817	0	50,361	0	123,481	45,817
3 Produce a moderate level of commodities while enhancing or emphasizing other selected resources, manage for dispersed motonzed recreation	66,452	62,281	0	0	39,053	66,452
4 Provide water oriented recreational oppoltuntlies with visual quality backgrounds	30,530	26,279	30,530	30,530	27,362	30,530
5 Establish representative vegetation and geologic areas for scientrfic and educational research and establish special areas with unique geologic. ecologic. or cultural features	6,582	4,777	4,777	5,418	39,157	6,642
6 Manage as a designated Wild River	5,788	5,788	5,788		5,788	5,788
7 Improve fish and wildlife harvest species habitat while producing other commodities	18,574	23,974 1/	18,574	18,574	17,888	18,574
8 Retain a natural-appearing forest environment while also producing some timber, forage, and water	46,846	42,154	44,994	0	46,025	46,846
	12,164 2/					
10 Maintain all land and resource values necessary to retain a high value for exchange	5,559	5,559	5,719	5,559	5,559	5,559
11 Provide winter recreation oppourtunities	13,288	11,296	3,645	6,862	6,708	13,288
12 Emphasize land uses for facillities such as pipelines, transmission lines, and administrative sites	2,153	555	2,153	2,153	2,153	2,153
13 Intensively manage timber and forage resources	354,850	408,238	487,644	567,849	140,134	353,790
14 Provide areas for studies emphasizing wildlife and timber resource management relationships	6,818	6,818	13,493	0	361	6,818
15 Manage for predominantly-natural appearing landscape and late successional wildlife habitat using intensive timber management	160,148	158,810	95,827	120,772	309,836	160,148
TOTAL FOREST ACRES	794,374	794,374	794.374	794,374	794,374	794,374

1/Acreages also include those areas managed for protection of T&E species that are not individually identified on all other alternative maps because they are Minimum Management Requirements (MMR's) The habltat on these acres is required for T&E species protected by law

2/Carman Valley Watershed

3/Primarily Water Influence Zones in existing Ranger District Multiple Use and Land Use Plans, also includes 9,118 acres of land with current management direction emphasizing watershed management

TABLE 2.12 -COMPARISON OF AVERAGE ANNUAL OUTPUTS BY ALTERNATIVE FOR FIRST AND FIFTH DECADES

RESOURCE ELEMENT	BASE YEAR 1982	1980 RPA FOR 1990	1980 RPA FOR 2030	IDECADE	PRF	CUR	RPA	CMD	NMK	UNE
RECREATION										
Developed Public (MRVD)	1,388	1,850	2,800	1	1,976	1,976	1,976	1,976	1,976	1,976
			2,800	5	3,316	2,185	2,913	3,318	3,318	3,318
Developed Ski (MRVD)	210		-	1	292	292	292	292	292	292
				5	830	734	639	830	734	830
Dispersed (MRVD)	2,306	2,550	3,250	1	2,925	2,925	2,925	2,925	2,925	2,925
				5	4,960	4,960	4,960	4,960	4,960	4,960
Wilderness (MRVD)	0		-	1	55	55	55	55	55	55
				5	55	55	55	55	55	55
Useable OHV (Miles) 1/										
0-Closed	819		-	1	62	82	133	85	483	88
				5	113	106	179	114	581	113
1-Open	747		-	1	685	1,486	688	850	552	685
				5	883	1,923	924	1,140	665	883
2-DRO Summer/Open Over Snow			-	1	1,193	808	1,111	1,144	971	1,193
				5	1,539	1,046	1,493	1,534	1,169	1,539
3-DRO	1,344		-	1	294	9	338	302	172	294
				5	379	12	455	405	207	379
4-DRO Summer/Closed Over Snow	-		-	1	17	20	17	17	16	17
				5	23	26	23	23	19	23
5-Closed Summer/Open Over Snow	-		-	1	43	46	43	168	42	43
				5	56	59	58	225	50	56
6-DRO - Closed 11116 to 4/30	-		-	1	194	57	194	0	185	194
				5	250	74	250	0	229	250
Unuseable OHV (Miles)	-		-	1	789	787	792	806	769	789
				5	1,017	1,016	1,064	1,080	916	1,017
Visual Quality Index (%)	520	51.5	51.5	1	50.5	49.9	49.1	49	51	51
				5	46.6	41.8	42.4	39.9	49.3	47.8
WILDLIFE AND FISH										
Peregrine Falcon (pairs)	0	N/A	N/A	1	3	3	3	3	3	3
				5	9	3	3	3	3	3
Bald Eagle (pairs)	0	N/A	N/A	1	5	5	5	5	5	5
				5	5	5	5	5	5	5
Deer (M animals)	13	162	162	1	130	130	133	133	130	133
				5	145	14.5	15.4	14.6	11.8	130
Spotted Owls (pairs)	110	N/A	N/A	1	100	100	100	100	100	100
				5	65	66	60	59	82	74
Goshawk (territories)	75	N/A	N/A	1	75	75	75	75	75	75
				5	75	75	75	75	75	75
Wildlife User Days (MWFUD)	105.8	-	-	1	119.3	139.0	130.0	120.1	119.3	118.5
				5	120.7	226.0	211.0	120.1	118.1	119.2
Fish User Days (MWFUD)	90.2	-	-	1	101.6	92.0	107.0	102.3	101.6	101.0
				5	102.8	155.0	178.0	103.9	100.6	101.6
Direct Habitat Improvement Deer (MWFUD)	31	-	-	1	3.5	2.8	5.9	3.5	3.6	3.5
				5	3.5	2.9	5.3	3.5	3.5	3.5
Other Wildlife Species (Except T&E) (MWFUD)	2.0	-	-	1	2.3	1.9	4.0	2.4	2.4	2.3
				5	2.4	1.4	3.6	2.4	2.4	2.4
Fish (Except T&E) (MWFUD)	0.5	-	-	1	0.6	0.5	1.2	0.7	0.6	0.6
				5	0.6	0.4	1.0	0.5	0.6	0.6
Induced Habitat Improvement Deer (MWFUD)	61.5	-	-	1	66.6	70.0	71.2	67.0	67.4	66.8
				5	68.5	118.0	118.9	67.6	66.9	67.1
Other Wildlife Species (Except T&E) (MWFUD)	41.0	-	-	1	44.4	47.4	46.8	44.7	44.9	44.5
				5	45.6	79.2	79.3	45.0	44.6	44.7
Fish (Except T&E) (MWFUD)	5.4	-	-	1	6.1	6.4	5.9	6.6	6.1	6.0
				5	6.2	10.7	9.9	6.1	6.0	6.1

TABLE 2.12 - COMPARISON OF AVERAGE ANNUAL OUTPUTS BY ALTERNATIVE FOR FIRST AND FIFTH DECADES (CONT.)

RESOURCE ELEMENT	BASE YEAR 1982	1980 RPA FOR 1990	1980 RPA FOR 2030	DECADE	PRF	CUR	RPA	CMD	NMK	UNE
Direct Habitat Improvement Wildlife (Acres)	1,000			1	1,000	1,000	1,000	200	2,000	900
				5	1,000	1,000	1,200	200	2,000	800
Fish (Acres)	120			1	20	20	20	10	80	20
				5	20	20	25	10	80	10
RANGE			30.4							
Grazing (M AUM)	20.0	18.5		1	20.8	22.4	34.2	20.8	9.0	20.8
				5	23.0	20.0	30.4	27.0	1.0	23.0
TIMBER										
Allowable Sale Quantity (MMBF) 2/	194.2	194.2	194.2	1	142.3	173.4	173.0	180.1	104.9	110.8
				5	142.3	193.7	198.4	196.9	104.9	114.4
Allowable Sale Quantity (MMCF)	299	299	29.9	1	22.0	26.7	26.6	27.8	16.2	17.2
				5	22.0	29.8	30.5	30.3	16.3	17.7
Reforestation (Acres)	1,450	4,134	4,823	1	3,865	5,070	6,980	5,953	4,930	3,343
				5	4,837	4,040	3,250	4,760	2,056	3,394
Timber Stand Improvement (Acres)	2,596	3,584	3,634	1	12,516	4,900	7,740	12,571	12,516	12,516
				5	7,677	8,490	6,670	8,856	9,195	8,278
WOOD PRODUCTS OTHER THAN SAWTIMBER										
Fuelwood (Cords)	28,000		-	1	27,937	38,630	35,550	35,680	16,094	16,075
				5	30,971	45,450	46,270	43,164	22,669	20,450
Biomass (MMCF)			-	1	3.7	4.2	4.2	4.5	2.6	2.8
				5	3.6	4.5	4.9	5.0	2.8	3.1
WATER										
Quality (MM Ac Ft at Standard)	1.96	1.98	2.01	1	2.08	2.05	2.08	2.05	2.07	2.07
				5	2.09	2.07	2.07	2.07	2.09	2.10
Increased Quantity (M Ac Ft)			-	1	125	110	144	116	93	96
				5	130	137	134	136	113	120
Watershed Improvement (Acres)	120	270	310	1	100	25	100	25	100	100
				5	0	0	0	0	0	0
LANDS AND MINERALS										
Minerals (Plans of Operation)	150	173	222	1	200	240	240	300	150	150
				5	400	400	400	600	300	300
Land Acquisition (Acres) 3/	2,300	3,000	0	1	500	248	250	800	2,000	500
				5	500	200	250	800	2,000	500
HUMAN RESOURCES										
Programs (Enrollees)	31	140	140	1		57	140	140	140	140
				5		63	140	140	140	140
FIRE										
Fuel Treatment (Acres)	8,000	2,800	2,600	1	3,200	6,400	10,900	5,800	2,100	2,000
				5	3,500	7,500	7,300	4,300	1,500	1,400
Expected Acres Burned by Wildfire										
Intensity Level 1	20	N/A	N/A	1	15	35	14	14	14	14
				5	35	60	38	41	34	38
Intensity Level 2	73			1	52	128	52	52	50	50
				5	125	218	140	144	120	133
Intensity Level 3	94			1	67	165	67	67	64	65
				5	161	281	180	185	154	171
Intensity Level 4	219			1	155	383	155	155	150	150
				5	376	655	419	432	359	399
Intensity Level 5	404			1	288	707	286	286	278	279
				5	699	1,208	773	803	665	742
Intensity Level 6	228			1	162	399	162	162	157	157
				5	395	682	436	453	376	418
Total	1,038			1	739	1,817	736	736	713	715
				5	1,790	3,105	1,986	2,058	1,708	1,901

TABLE 2.12 - COMPARISON OF AVERAGE ANNUAL OUTPUTS BY ALTERNATIVE FOR FIRST AND FIFTH DECADES (CONT.)

RESOURCE ELEMENT	BASE YEAR 1982	1980 RPA FOR 1990	1980 RPA FOR 2030	DECADE	PRF	CUR	RPA	CMD	NMK	UNE
TRANSPORTATION										
Trail Const./Reconst. (Miles)	230	140	130	1 5	72 08	165 35	207 50	72 08	72 06	72 08
Road Const./Reconst. (Miles)	99.1	N/A	N/A	1 5	53 35	76 48	74 47	74 47	63 40	73 46
Road Maintenance (Miles)	2,403			1 5	2,494 2,708	2,530 2,751	2,535 2,733	2,538 2,741	2,516 2,655	2,536 2,703
FACILITIES										
Dams and Reservoirs F S (Number)	24	N/A	N/A	1 5	24 24	24 24	24 24	24 24	24 24	24 24
Other Federal (Number)	5			1 5	5 5	5 5	5 5	5 5	5 5	5 5
Other State/Local (Number)	38			1 5	37 37	37 37	37 37	37 37	37 37	37 37
Private (Number)	55			1 5	44 44	44 44	44 44	44 44	44 44	44 44
Administrative Sites										
FS. Owned (Number)	23			1 5	20 20	20 20	20 20	20 20	20 20	20 20
Leased (Number)	5			1 5	3 3	3 3	3 3	3 3	3 3	3 3
TOTAL BUDGET (MM\$)	18.7	1967	2206	1 5	212 364	201 291	243 305	24.4 40.5	22.2 32.4	213 351
TOTAL COST (MM\$)	193		-	1 5	227 391	214 307	255 318	25.9 43.4	237 350	228 379

f OHV Prescription Category, Restrict
 I Potential yield from standard, speci
 f Excluding exchange

= Prescription Categories #2-#6

TABLE 2.13 - ADDITIONAL KEY COMPARISONS OF ALTERNATIVES BY SELECTED ENVIRONMENTAL CONSEQUENCES

ELEMENT Assessment Variable (Unit of Measure)	Decade 1/	PRF	CUR	RPA	CMD	NMK	UNE	1982 LEVEL
RECREATION								
Acres Primitive	1	0	0	0	0	0	0	0
Semi-primitive nonmotorized	1	92,888	84,162	109,456	82,985	153,697	92,888	89,773
Semi-primitive motorized	1	84,420	103,663	76,572	101,526	38,828	84,420	115,198
Roaded natural	1	563,313	562,939	566,571	564,056	561,759	563,313	545,777
Rural	1	53,753	43,630	41,775		40,090	53,753	43,626
MRVD's Primitive								
Acres Primitive	1	0	0	0	0	0	0	0
Semi-primitive nonmotorized	1	199	200	266			199	162
Semi-primitive motorized	1	164	220	166			164	185
Roaded natural	1	1,941	2,145	2,214			1,941	1,573
Rural	1	2,890	2,628	2,547			2,890	1,985
PAOT's Primitive								
Acres Primitive	1	0	0	0	0	0	0	0
Semi-primitive nonmotorized	1	923	842	1,095	830	1,537	923	1,000
Semi-primitive nonmotorized	1	844	1,036	746	1,014	389	844	1,226
Roaded natural	1	416,556	416,178	419,263	417,402	415,701	416,556	396,922
Rural	1	143,521	117,923	111,539	122,304	107,040	143,521	188,205
Restrictions (Miles of NFS Routes & Acres within boundaries) 2/								
0 - Closed								
Miles Roads & Trails	1	88	82	133	85	483	88	819
Acres	1	44,939	19,793	31,798	19,923	220,072	44,939	43,050
1 - Usable Acres - Open								
Miles Roads & Trails	1	685	1,486	688	850	552	685	747
Acres	1	142,103	358,321	164,881	200,312	142,103	142,103	484,999
2 - Designated Routes Only Summer/Open Over-the-Snow								
Miles Roads & Trails	1	1,193	808	1,111	1,144	971	1,193	1,344
Acres	1	266,219	194,591	266,097	269,567	171,371	266,219	266,325
3 - Designated Routes Only								
Miles Roads & Trails	1	294	9	338	302	172	294	
Acres	1	50,829	2,082	80,860	71,176	187,125	50,829	
4 - Designated Routes Only Summer/Closed Over-the-Snow								
Miles Roads & Trails	1	17	20	17	17	16	17	
Acres	1	10,705	4,742	4,117	4,117	1,504	10,705	
5 - Closed Summer/Open Over-the-Snow								
Miles Roads & Trails	1	43	46	43	168	42	43	
Acres	1	11,018	11,018	10,342	39,541	7,255	11,018	
3 - Designated Routes Only Closed 11/16 to 4/30								
Miles Roads & Trails	1	194	57	194	0	186	194	
Acres	1	69,515	13,789	46,541	0	17,309	69,515	
Closed 9/15 to 12/31								
Miles Roads & Trails	1	22	0	0	0	0	22	
Acres	1	9,308	0	0	0	0	9,308	
In-useable OHV								
Miles Roads & Trails	1	789	787	792	806	760	789	
Acres	1	189,738	189,738	189,738	189,738	189,738	189,738	189,738
Total Forest Acres	1	794,374	794,374	794,374	794,374	794,374	794,374	794,374
Total Roads Federal System Miles	1	3,302	3,294	3,317	3,317	3,182		

TABLE 2.13 - ADDITIONAL KEY COMPARISONS OF ALTERNATIVES BY SELECTED ENVIRONMENTAL CONSEQUENCES (CONT.)

ELEMENT Assessment Variable (Unit of Measure)	Decade 1/	PRF	CUR	RPA	CMD	NMK	UNE	1982 LEVEL
Potential Risk of Cultural Disturbance or Destruction 3/	5	MOD	MOD	MOD	HIGH	MOD	MOD	MOD
Visual Quality Objectives (Acres)								
Reservation	5	26,912	25,554	25,554	26,179	27,410	26,912	30,674
Retention	5	163,100	122,470	120,115	6,781	467,098	194,100	577,830
Partial Retention	5	311,400	69,646	123,017	141,490	101,897	365,795	142,523
Modification	5	267,146	548,698	499,009	590,940	191,614	161,751	55,152
Maximum Modification	5	25,816	28,006	26,679	23,934	6,355	25,816	7,413
Unacceptable Modification	5	0	0	0	0	0	0	0
2 WILDLIFE								
Wildlife Habitat Diversity (M Acres)								
Seedlings & Saplings (1X)	1	31.9	32.3	32.3	32.4	31.9	31.9	41.7
	5	89.2	88.0	87.8	93.5	80.0	82.6	
Poles (2X)	1	41.0	41.0	41.0	41.0	41.0	41.0	388
	5	98.4	79.6	79.8	106.9	51.1	50.4	
Small Sawtimber	1	130.1	130.1	130.1	130.1	130.1	130.1	120.9
<40% Crown Closure (3A)	5	96.5	47.5	41.1	90.1	97.5	93.7	
Small Sawtimber	1	174.2	174.2	174.2	174.2	174.2	174.2	169.8
>40% Crown Closure (3C)	5	193.4	85.2	89.2	198.8	199.4	225.4	
Large Sawtimber	1	115.1	115.1	115.1	115.1	115.1	115.1	115.1
<40% Crown Closure (4A)	5	88.7	93.5	91.6	79.2	64.5	93.0	
Large Sawtimber	1	126.2	126.2	126.2	126.2	126.2	126.2	111.2
>40% Crown Closure (4B/C)	5	65.5	53.0	56.0	51.9	107.5	80.1	
Hardwood-Conifer	1	39.7	39.7	39.7	39.7	39.7	39.7	39.7
Mix (X3)	5	35.1	27.7	24.5	23.0	35.2	37.5	
Pure Hardwoods (HD)	1	32.4	32.4	32.4	32.4	32.4	32.4	32.4
	5	32.4	32.4	32.4	32.4	32.4	32.4	
Brush and Grass (SX)	1	46.5	46.5	46.5	46.5	43.4	46.5	73.8
	5	51.7	51.7	51.7	51.7	51.7	51.7	
3 RANGE								
Potential Suitable Rangeland (Acres)								
Permanent	5	50,789	50,789	50,785	63,343	50,785	50,785	50,785
Transitory	5	408,730	464,653	477,188	471,990	372,811	408,721	464,653

TABLE 2.13 - ADDITIONAL KEY COMPARISONS OF ALTERNATIVES BY SELECTED ENVIRONMENTAL CONSEQUENCES (CONT.)

ELEMENT Assessment Variable (Unit of Measure)	Decade 1/ ¹	PRF	CUR	RPA	CMD	NMK	UNE	1982 LEVEL
4 TIMBER								
Suitable Land For Timber Production (Acres)	1	528,474	604,835	580,764	591,944	450,327	528,536	609,296
intensive Timber Management (Acres)	1	369,473	458,454	459,030	459,335	273,000	319,761	511,805
Nonintensive Timber Management (Acres)	1	159,001	146,381	121,734	132,609	177,327	208,775	97,493
Predicted Growth as Percent of Long-Term Sustained-Yield Capacity (Percentage)	5	87%	95%	95%	98%	64%	92%	102%
5 WATER								
Percentage Forestwide Cumulative Watershed Effect Increase Over the 1977-87 Period	1-5 Average	+32%	+41%	+60%	+50%	+14%	+25%	---
6 MINERALS								
Proposed Area of Mineral Withdrawal by Mineral Potential (Total Acres)								
High Potential		5,018	0	5,698	127	14,066	5,698	0
Moderate Potential		697	0	350	0	4,077	697	0
Low Potential		1,037	1,061	3,431	1,474	20,086	5,013	1,061
Total		6,752	1,061	9,479	1,601	38,229	11,408	1,061
7 PROTECTION								
Air Quality Due to Prescribed Burning (Tons of Particulate Matter Generated)	1	1,800	3,700	6,300	3,300	1,200	1,200	2,500
8 LANDS								
Landlines to be Marked and Posted (Miles)	1	128	120	132	135	115	115	115
	5	10	10	10	10	10	10	10
9. ENERGY								
Forest Activities Consumption of Energy (Billions of BTUs)	1	243	316	316	314	207	229	---
Potential Energy Made Available (Billions of BTUs)	1	595	773	771	769	507	561	---

¹ All values associated with a given decade are average annual values for the period 1982 levels are goals or potentials to be comparable with project values

^{2/} OHV Prescription categories

^{3/} The chance of disturbing or destroying cultural resources. 'High' represents an increased risk of disturbance, 'Moderate' represents no change in the risk of disturbance, and 'Low' represents a decreased risk

PROPOSED RESEARCH NATURAL AND SPECIAL INTEREST AREAS

The ID Team identified twenty-two areas in the TNF as having potential for Research Natural Areas or Special Interest Areas Table 2.14 displays the areas by alternative. Those areas assigned in an alternative have a "yes" in the alternative column, a "no" means the area was not assigned. Appendix C contains a detailed description of each area and the analysis process

TABLE 2.14 - COMPARISON OF ALTERNATIVES BY PROPOSED RESEARCH NATURAL AREAS AND SPECIAL INTEREST AREAS

AREA	INVENTORIED ACRES	PRF	CUR	RPA	CMD	NMK	UNE
RESEARCH NATURAL AREAS							
1 Babbrtt Peak	1,061	YES	YES	YES	YES	YES	YES
2 Basin Peak	60	NO	NO	NO	NO	YES	NO
3. Sugar Pine Point	625	YES	NO	NO	YES	YES	YES
4 M Lola	498	NO	NO	NO	NO	YES	NO
5 Lyon Peak/Needle Lake	700	YES	NO	NO	NO	YES	YES
SUBTOTAL ACRES	2,944	2,386	1,061	1,061	1,686	2,944	2,386
SPECIAL INTEREST AREAS							
1 Placer County Big Tree Grove Botanical Area	346	YES	YES	YES	YES	YES	YES
2 Devils Postpile Geologic Area	69	YES	NO	NO	YES	YES	YES
3 Glacier Meadow Geologic Area	84	YES	NO	NO	YES	YES	YES
4 Grouse Falls Scenic Area	220	YES	NO	NO	YES	YES	YES
5 Hawley Lake Cuitural Area	5,323	NO	NO	NO	NO	YES	NO
6 Meadow Lake Cuitural Area	58	YES	NO	NO	YES	YES	YES
7 Boca Cuitural Area	1,976	NO	NO	NO	NO	YES	NO
8 Kyburz Cuitural Area	1,097	NO	NO	NO	NO	YES	NO
9 Sagehen Headwaters	79	YES	NO	NO	YES	YES	YES
10 Sierra Buttes	1,827	NO	NO	NO	NO	YES	NO
11 L Truckee River Terrace	468	NO	NO	NO	NO	YES	NO
12. Sagehen Basin	8,373	NO	NO	NO	NO	YES	NO
13 Independence Lake	81	NO	NO	NO	NO	YES	NO
14. Headwaters N F American	9,381	NO	NO	NO	NO	YES	NO
15 San Juan Ridge	6,541	NO	NO	NO	NO	YES	NO
16 Macklin Creek	380	NO	NO	NO	NO	YES	NO
17 Mason Fen	30	YES	NO	NO	YES	YES	YES
SUBTOTAL ACRES	36,333	886	346	346	886	36,333	886
GRAND TOTAL	39,277	3,272	1,407	1,407	2,572	39,277	3,272

Note: Wild Plum was considered for R designation but eliminated because of current and past logging of the area

LAND CLASSIFICATION FOR TIMBER

Table 21 5a summarizes the land classification for timber management by alternative. Appendix K contains a detailed description of the process used to identify land available, capable, and tentatively suited for timber production. Selection of the suitable timber base (item 9 of Table 2 15a) depends on the theme of each alternative, prescriptions compatible with the alternative program direction, costs and benefits, management intensity, constraints applied, and the FORPLAN linear program modeling procedure (see Appendix B).

Alternatives emphasizing timber production, such as Alternatives CUR, RPA, and CMD, would have the largest land base suited for timber production. Conversely, alternatives emphasizing amenity values and semi-primitive nonmotorized recreation, such as Alternative NMK, would have a low suitable land base.

TABLE 2.15a LAND CLASSIFICATION FOR TIMBER BY ALTERNATIVE

TIMBER CLASSIFICATION	PRF	CUR	RPA	CMD	NMK	UNE
1 NON-FORESTED LAND	112,775	112,775	112,775	112,775	112,775	112,775
2 FORESTED LAND	681,599	681,599	681,599	681,599	681,599	681,599
3 WITHDRAWN FROM TIMBER PRODUCTION	20,849	20,849	20,849	20,849	20,849	20,849
4 NOT CAPABLE OF PRODUCING INDUSTRIAL WOOD	31,732	31,732	31,732	31,732	31,732	31,732
5 PHYSICALLY UNSUITED	0	0	0	0	0	0
a Irreversible damage to soils, watersheds or productivity	0	0	0	0	0	0
b Unregenerable within 5 years of final harvest	0	0	0	0	0	0
6 INADEQUATE INFORMATION TO PROJECT RESPONSES	0	0	0	0	0	0
7 NOT SUITABLE FOR TIMBER UNDER THE ALTERNATIVE	100,544	24,183	48,254	37,074	178,691	100,482
8 TOTAL UNSUITABLE ACRES	265,900	189,539	213,610	202,430	344,047	265,838
9 TOTAL SUITABLE ACRES	528,474	604,835	580,764	591,944	450,327	528,536
10 LONG-TERM SUSTAINED YIELD CAPACITY (MMBF/YEAR)	177 0	242 0	234 2	215 5	110 3	164 7
11 TOTAL NATIONAL FOREST ACRES	794,374	794,374	794,374	794,374	794,374	794,374

TABLE 2.15b ACRES BY SILVICULTURE PRACTICE - DECADE 1

Practice	PRF	CUR	RPA	CMD	NMK	UNE
Total acres of clearcutting	20,460	28,140	56,500	23,000	44,910	2,570
Total acres of intermediate harvest 1/	35,000	19,220	26,790	35,000	35,000	35,000
Total acres of shelterwood	16,570	10,000	790	34,030	2,321	14,810
Acres in group selection (i.e., clearcuts in less than 3-acre units) or single tree selection	1,620	0	0	2,500	0	16,050

1/ Candidate acres. Actual acres harvested will depend on market conditions.

ECONOMIC EFFECTS

The purpose of this section is to compare economic values and significant tradeoffs. The following six sections include tables and accompanying narratives that display and describe various economic aspects of the alternatives considered (See Appendix D for a discussion of the conceptual relationships between net public benefits and economic variables, and Appendix B for a discussion of models and assumptions used in the analysis.)

- (1) Table 2.16 summarizes economic effects of the alternatives. Benefits and costs are displayed by major categories over decades 1 through 5. Estimated effects on local income and employment are presented for each alternative
- (2) Table 2.17 develops cash flow relationships from data contained in the previous table.
- (3) Table 2.18 and the accompanying discussion identifies tradeoffs in terms of present net value and affected resources of the minimum management requirements (MMR's), minimum implementation requirements (MIR's), and the common Forest constraint.
- (4) Table 2.19 displays PNV and major components of discounted costs and benefits for each alternative. Figure 2.1 displays the contribution to PNV by timber and recreation.
- (5) Table 2.20 displays indicators of each alternative's response to major local issues and National concerns.
- (6) The final section identifies the reasons for changes in PNV among the alternatives in terms of affected resources and recipient social groups.

Table 2.16 summarizes the economic effects of each alternative. The increase in total benefits over time is primarily the result of recreation expansion and projected timber price increases. Total benefits are disaggregated to returns to the U.S Treasury and noncash benefits. Returns to the Treasury represent potential revenues generated from the resource prescriptions proposed by each alternative. Over 95 percent of the returns to the Treasury are generated by timber sales

Because National policy calls for providing forest outputs such as water, recreation, and range for free or at a nominal charge, total benefits are substantially higher than returns to the Treasury. (See Appendix B for more detail on benefit and cash receipt values used in the analyses.) The difference between total benefits and return to the Treasury is displayed as noncash benefits. Noncash benefits account for 75 percent of total benefits the CUR, RPA, and CMD alternatives and 81, 82, and 83 percent of total benefits in the PRF, UNE, and NMK alternatives, respectively.

Costs are displayed in seven categories. Included in total costs are operations and maintenance costs, capital investment costs, and wildfire suppression. The last category is not included in the annual budget. Road construction and reforestation account for most capital investment on the TNF. Capital investment, therefore, relates primarily to the amount of timber harvest in each alternative, Timber harvest also accounts for most of the differences in operations and maintenance costs among alternatives. Fixed costs on the TNF account for about 3 million dollars (See Appendix B for more detail on costs used in the analyses.)

Effects on State and local economies in terms of potential 25 percent receipt shares and State yield tax revenues are also displayed. Differences in income and employment are also related to differences in timber harvest between alternatives. The recreation-generated component of total income and employment is larger than that for timber in all alternatives. The recreation-generated component, however, shows no variation among all alternatives in the first decade because developed and dispersed recreation RVD production is limited by demand Each of the 18 entries in Table 2.16 is accompanied by an explanatory footnote.

TABLE 2.16 - SUMMARY COMPARISON OF ECONOMIC EFFECTS BY ALTERNATIVE (Millions of 1982 \$/Yr.)

Economic Effect	Decade	PRF	CUR	RPA	CMD	NMK	UNE
1 Total Benefits (1982=93 7)	1	147 9	149 3	150 0	159 0	143 2	144 7
	2	167 9	175 9	177 9	179 9	161 9	163 5
	3	185 5	186 6	200 2	203 3	179 2	181 6
	4	205 3	202 7	219 4	226 5	198 3	200 8
	5	220 2	214 6	227 3	245 8	210 8	214 8
2 Returns to the U S. Treasury (1982=6 9)	1		37 8	37 1	38 9	23 9	25 3
	2	36 5	57 5	55 4	48 0	31 9	33 2
	3	42 9	64 3	68 2	60 1	36 8	39 1
	4	51 6	76 2	80 1	72 5	44 6	46 6
	5	59 8	73 5	83 9	85 1	52 1	54 7
3 Noncash Benefits (1982=86.8)	1	120 2	111 5	112 9	120 1	119 3	119 4
	2	131 4	118 4	122 5	131 9	130 0	130 3
	3	142 6	122 3	132 0	143 2	142 4	142 5
	4	153 7	126 5	139 3	154 0	153 7	154 2
	5	160 4	141 1	143 7	160 7	158 7	160 1
4. Total Costs (1982=19 3)	1	22.7	21 4			23 7	22 8
	2	27.0	23 7			25 3	26 2
	3	31 8	26 5			28 0	30 7
	4	35 7	28 0			31 3	35 3
	5	39 1	30 7	31.8		35 0	37 9
5 Total Budget (1982=18 7)	1	21 2	20 1			22 2	21 3
	2	25.2	22 4		27.9	23 6	24 0
	3	29 6	25 0	30 6	34 4	25 9	28 6
	4	33 2	26 5	29 9	38 7	28 9	32 9
	5	36 4	29.1	30 5	40 5	32 4	35 1
6 Operation and Maintenance Cost (1982=13 9)	1	13 1	13 0	13 8	14 6	12 6	12 7
	2	16 3	14 0	14 9	18 7	14 7	16 3
	3	18 1	15 1	17 1	21 1	17 3	18 9
	4	20 3	16 3	18 1	23 8	17 9	21 0
	5	22 4	17 6	19 4	25 6	18 4	21 4
7. Capital Investment Cost (1982=5.4)	1	9 6	8 4	11.7	11 3	11 1	10 1
	2	10 7	9 7	12 5	11 0	10 6	9 9
	3	13 7	11 4	14.8	15 6	10 7	11 8
	4	15 4	11 7	13 2	17 9	13 4	14 3
	5	16 7	13 1	12 4	17 8	16 6	16 5
8 Purchaser Road Credit (1982=2.8)	1	1 4	1 7	1 7	2 0	1 6	1 9
	2	0 9	1 2	2 0	1 0	0 7	0 7
	3	0 6	1 0	1 4	0 6	0 6	0 6
	4	0 5	1 3	1 0	0 6	0 6	0 6
	5	0 5	0 9	1 0	0 6	0 6	0 6
9. Appropriated Roads (1982=0.7)	1	0 2	0 6	6	0 3	0 2	0 2
	2	0 1	0 5	5	0 1	C	0
	3	0	0 6	8	C	C	0
	4	0	0 7	5	C	C	0
	5	0	0 6	5	C	C	0
10 Other Capital Investment (1982=1 9)	1	7 3	5 4	a 7	8 3	8 6	7 3
	2	9 0	7 3	9 0	9 5	9 2	8 5
	3	12 4	9 1	11 9	14 2	9 4	10 5
	4	14 2	9 0	11 0	16 6	12 1	13 0
	5	15 5	10 9	10 2	16 6	15 3	15 2

TABLE 2.16 - SUMMARY COMPARISON OF ECONOMIC EFFECTS BY ALTERNATIVE
(Millions of 1982 \$/Yr.) (Continued)

Economic Effect	Decade	PRF	CUR	RPA	CMD	NMK	UNE	
11 25% Receipt Shares (1982=17)	1	69	95	93	97	60	63	
	2	91	144	139	120	80	83	
	3	107	161	171	150	92	98	
	4	129	191	200	181	112	117	
	5	150	184	210	213	130	137	
12 State Yield Tax Revenues (1982=0.6)	1	0.8	1.1	1.1	1.1	0.7	0.7	
	2	1.1	1.6	1.6	1.4	0.9	1.0	
	3	1.2	1.8	2.0	1.7	1.1	1.1	
	4	1.5	2.2	2.3	2.1	1.3	1.4	
	5	1.7	2.1	2.4	2.5	1.5	1.6	
13 Income	1	72.3	78.7	79.8	80.4	64.7	66.1	
14 Induced Employment	1	5,262	5,665	5,753	5,887	4,762	4,824	
	FTES	1	413	392	452	476	433	415
	Total Employment	1	5,675	6,057	6,205	6,363	5,195	5,239
15 Discounted Benefits *		2,965	3,029	3,213	3,368	2,800	2,848	
16 Discounted Costs *		527	446	542	635	476	502	
17 Present Net Value *		2,438	2,584	2,671	2,733	2,324	2,346	
18 Benefit/Cost Ratio *		5.6	6.8	5.9	5.3	5.9	5.7	

- 1 Total benefits include both cash returns to the US Treasury and noncash benefits. Total benefits are the estimated total amount that consumers would be willing to pay for Forest outputs, whether or not this amount is actually collected by the US Government. See Appendix B for an explanation of benefits and costs.
- 2 Returns to the US Treasury are the estimated potential payments by consumers of Forest outputs collected by the Federal Government.
- 3 Noncash benefits are the difference between the total estimated amount that consumers would be willing to pay for Forest outputs and actual collections by the Federal Government. At present it is national policy to provide most Forest outputs either at no charge to consumers or at a charge less than the total willingness-to-pay value.
- 4 Total costs include the Federal costs needed to produce Forest outputs, appropriated roads, FFF, and nonfederal costs. Nonfederal costs equal about \$0.7 million (see Appendix I).
- 5 Total budget is equal to Federal cost less the cost of fighting forest fires (FFF).
- 6 Operation and maintenance costs include the cost of administration, management, and protection of existing resources and capital assets. Operation and maintenance cost equals Total Cost less Capital Investment Cost.
- 7 Capital investment costs are the costs of creating or enhancing capital assets. Costs of treatments or activities that generate outputs or benefits over more than one period are capital investment costs.
- 8 Purchaser road credit is the cost of roads built by timber purchasers. These roads are accepted as in-kind payments in lieu of cost from timber purchasers.
- 9 Appropriated roads is the cost of roads built by the Forest Service rather than by timber purchasers. Total road cost less purchaser road credit equals appropriated road cost.
- 10 Other capital investment is all investment cost other than purchaser road credits and appropriated roads. This includes site preparation, cultural treatment, recreation development, etc.
- 11 Twenty-five percent of potential returns to the US Treasury would be distributed back to the counties in proportion to the Tahoe National Forest's acreage in each county.
- 12 Under California law, a yield tax currently equal to 2.9 percent of timber harvest value is levied on timber operators.
- 13 Total personal income including wages, salaries, proprietor's income, and rents was estimated for the Forest's zone of influence. See Appendix B, Section IV, and Chapter 4, Section B for a description of the input-output model used to make estimates.
- 14 Employment generated by the Forest in the zone of Influence was estimated with an input-output model. See Appendix B, Section IV, and Chapter 4, Section B. FTE's are full-time equivalents of part-time and full-time Forest Service employees.
- 15 Discounted benefits over the planning period.
- 16 Discounted costs over the planning period.
- 17 Discounted benefits less total discounted costs.
- 18 Discounted benefits divided by total discounted costs.

*Induced by management activities (net of MLV)

Table 2.17 displays average annual cash flows and noncash benefits for the first and fifth decades by alternative. Cash flow is the difference between cash receipts and total Federal costs. The following discusses the relationships displayed in the table for the first and fifth decades.

Ranking the alternatives by PNV and cash flow yields the same general pattern because both are dependent on the amount of timber produced. The RPA, CMD, and CUR alternatives maintain the top three positions whether ordered by PNV or fifth-decade cash flow. Likewise, the PRF, UNE, and NMK alternatives are always at the bottom of the list.

Total Federal cost also relates to timber volumes. The CUR, CMD, and RPA alternatives are the top three in total Federal costs and timber volume. The UNE alternative is fourth in total costs. It is more than the PRF alternative, mainly because of increased timber costs and roads per unit of timber output. The NMK alternative has the lowest timber yields and total costs.

The return to Treasury pattern follows the amount of timber harvest. In decade five, returns to the Treasury (and timber costs) are higher than in the first decade, primarily because of anticipated timber price (and timber cost) increases.

TABLE 2.17 - AVERAGE ANNUAL CASH FLOWS AND NONCASH BENEFITS

ALTERNATIVE	NET CASH FLOW		TIMBER ASQ		TOTAL FEDERAL COSTS		RETURN TO TREASURY		NONCASH BENEFITS	
	1 \$MM	5 \$MM	1 MMBF	5 MMBF	1 \$MM	5 \$MM	1 \$MM	5 \$MM	1 \$MM	5 \$MM
CUR	17.1	43.5	173.4	193.7	20.7	30.0	37.8	73.5	111.5	141.1
CMD	13.7	42.4	180.1	196.9	25.2	42.7	38.9	85.1	120.1	160.7
RPA	12.3	52.8	173.0	198.4	24.8	31.1	37.1	83.9	112.9	143.7
PRF	5.7	21.4	142.3	142.3	22.0	38.4	27.7	59.8	120.2	160.4
UNE	3.2	17.5	110.8	114.4	22.1	37.2	25.3	54.7	119.4	160.1
NMK	0.9	17.8	104.9	104.9	23.0	34.3	23.9	52.1	119.3	158.7

1/ Costs are limited to agency expenditures. Payments to counties and cooperators' expenditures are not included.

CONSTRAINT ANALYSIS

Marginal Cost of Constraints Table 2 18 displays the opportunity cost in terms of the PNV of the MMR's, the MIR's, and the common Forest constraint. (See the Management Direction Common to All Alternatives in Section E of this chapter for a discussion of the purpose of these requirements.) These constraints also provide non-priced amenity benefits. The primary recipients of these amenity benefits are the former urban residents, regional recreationists, alternative lifestyle, and Native American social groups. (See Chapter 3, THE SOCIAL ENVIRONMENT, for a discussion of the characteristics of each social grouping represented on the TNF.) The opportunity costs and amenity benefits are discussed below.

As a group, the MMR's reduce PNV in the first decade \$454 million and timber harvest volume 223 MMBF. In the first decade, the MMR's individually account for 82 percent of the decline in PNV and 39 percent of the decline in timber harvest volume. The remaining decline in PNV and timber volume is because of individual MMR interaction or overlap, i.e., where restrictions help meet more than one MMR. In terms of priced benefits and costs, the MMR's significantly affect only timber and related water and range benefits and timber and related road costs.

1. Viable Populations for Spotted Owl (**VPD**). The minimum management requirement for spotted owl maintains 1,000 acres of suitable habitat for each of the 32 non-wilderness pairs needed to maintain a viable population on the TNF. This requirement limits the silvicultural practices, and their timing, on affected acres to maintain spotted owl habitat. Allowable harvest is reduced 25 MMBF per year for the first 8 decades. PNV is reduced \$150 million. Water production declines slightly because fewer acres are harvested. Recreation outputs are not affected.

Because the spotted owl constraint results in lengthened timber harvest rotations, visual and recreation quality is also enhanced. Other wildlife species (besides spotted owls) also benefit from the spotted owl habitat.

2. Sensitive Watershed Lands (**WSD**). The minimum management requirement for sensitive watershed lands limits the amount of vegetative disturbance on erosive and overly-steepened slopes. This requirement is fulfilled by practicing selective timber harvest on 48,000 acres of sensitive watershed lands. Allowable harvest is reduced 16 MMBF for the first 8 decades. PNV is reduced \$88 million. Water and range outputs are reduced when fewer productive acres are harvested. The quantity of recreation outputs is unaffected.

The selective harvesting used to protect sensitive watershed lands also enhances visual and recreation quality.

3. Riparian Areas (RIP). The minimum management requirement for riparian areas prevents adverse riparian area changes. This requirement is fulfilled by practicing selective timber harvest on 34,000 acres adjacent to perennial streams. Allowable harvest is reduced about 9 MMBF per year for the first 8 decades. PNV is reduced \$71 million. Water and range outputs are slightly reduced because fewer acres are harvested. The quantity of recreation outputs is unaffected, but recreation and visual quality is enhanced.
4. Nondeclining Yield (NDY). The nondeclining yield requirement helps reduce fluctuations in the local wood products manufacturing industry and enhances multiple-use management. This requirement ensures that planned sale levels for future decades are equal to or greater than the sale quantity of the previous decade. Allowable timber harvest is reduced about 29 MMBF per year for the first decade and PNV is reduced \$41 million. In periods when the nondeclining yield requirement results in fewer acres harvested, or shifts the harvest to less productive vegetation types, range and water outputs are also reduced.
5. Dispersion (DSP). The requirement to disperse regeneration units maintains logical harvest units of at least 5 acres between openings. Allowable timber harvest is reduced 3 MMBF per year for the first 8 decades and PNV is reduced \$13 million. Water and range outputs are reduced.

when fewer productive acres are harvested. The quantity of recreation outputs is unaffected.

The primary benefit of the dispersion constraint is enhanced visual quality. Dispersion also increases habitat diversity and reduces adverse impacts to water and air quality. The quality of the recreation experience is also enhanced through increased scenic diversity.

6. **Threatened and Endangered Species (TES).** The T&E minimum management requirement protects T&E species habitat. This requirement is fulfilled by practicing selective timber harvest in bald eagle and Lahontan cutthroat trout habitat. Peregrine falcon recovery projects are also implemented. PNV declines \$7 million because of the 2.5 MMBF per year decline in allowable harvest that occurs in the first 8 decades and because of the added costs for the falcon recovery projects. Water, range, and recreation outputs are not significantly affected. The selective timber harvesting used to protect T&E species habitat generates other non-priced benefits. These include enhanced visual and recreation quality.

7. **Culmination of Mean Annual Increment (CMI).** The requirement to grow trees to an age that produces 95 percent of the maximum average growth reduces timber benefits by extending minimum rotation lengths of plantations. Allowable harvest is reduced 1.5 MMBF per year for the first 8 decades and PNV is reduced \$2.5 million. Water, recreation, and range outputs are not significantly affected.

Because the CMAI constraint only applies to plantations, few non-priced benefits occur. The effect of extending harvest rotation lengths might provide a minor benefit to the visual quality of the plantations.

8. **Minimum Implementation Requirements (CEE).** The minimum implementation requirement for scenic highways maintains an attractive roadside along existing and planned State scenic highways. Timber is managed along scenic highway corridors on long rotations. A second operational requirement to restrict the total acreage of regeneration cutting to 18 percent of the timber suitable acres was always met because of the restrictions previously placed on regeneration cutting by the MMR's and the timber policy requirements. This operational requirement thus had no effect on PNV or timber harvests.

The scenic highway requirement reduces allowable harvest 0.4 MMBF per year for the first 8 decades and 9 MMBF per year for the following 8 decades. PNV is reduced \$9 million. Water, recreation, and range outputs are not significantly affected.

9. **Carman Valley Watershed (CEF).** This management requirement, common to all alternatives considered in detail, limits timber management in a watershed that is declining. The SMZ's are removed from regulated timber management and the remainder of the watershed is managed on a long rotation. Allowable harvest is reduced 0.09 MMBF per year for the first 8 decades. PNV is reduced \$0.4 million. Water, range and recreation outputs are not significantly affected.

Table 2.19 displays the alternatives ranked by decreasing PNV. The table also displays major components of discounted costs and benefits for each alternative. The constrained economic efficiency (CEE) benchmark, which represents the MMR's, MIR's, and common Forest constraint, and the minlevel benchmark (MLV), which represents fixed costs and background outputs, are also displayed for comparison.

In MLV, fire loss is displayed as a negative benefit, but because MLV benefits and costs are subtracted from the alternatives, reduced fire losses are displayed as loss reductions (a benefit) in the alternatives. Timber and recreation account for most benefits and costs. Water benefits and road costs are closely related to timber benefits and costs. Changes in timber output primarily determines the rankings of alternatives by PNV.

TABLE 2.18 - PRESENT NET VALUE COMPARISON - MARGINAL COST OF CONSTRAINTS (\$MM)

	FLW 1/	VPD	WSD	RIP	NDY	DSP	TES	CMI	BAL- ANC	MMR	CEE 2/	CEF 3/	MLV 4/
PNV	3374.2									2920.1	2911.4	2911.0	1358.8
CHANGE IN PNV 5/		-150.6	-87.6	-70.8	-40.5	-13.3	-7.2	-2.5	-81.6	-454.1	-8.7	-0.4	
DISCOUNTED COST	893.0									579.1	575.8	575.5	183.9
CHANGE IN DISCOUNTED COST		-54.5	-61.6	-24.6	-22.3	-8.2	-5.6	-5.4	-131.7	-313.9	-3.3	-0.3	
DISCOUNTED BENEFITS	4267.2									3499.2	3487.1	3486.5	1542.7
CHANGE IN BENEFITS		-205.1	-149.2	-95.4	-62.8	-21.5	-12.8	-7.9	-213.3	-768.0	-12.1	-0.6	
DISCOUNTED BENEFITS BY RESOURCE													
Timber	2571.7									1874.9	1864.0	1863.6	0
Recreation	1485.9									1496.9	1497.0	1496.9	232.2
Water	149.1									70.7	69.1	69.0	1369.3
Range	12.1									7.5	7.5	7.5	0
FIRE LOSS	48.4									49.2	49.5	49.5	-58.8
DISCOUNTED COST BY COST CATEGORY													
Timber	655.8									404.5	400.2	400.0	0
Recreation	141.6									141.8	141.8	141.8	3.1
Roads	138.6									84.9	85.7	85.7	0
Fire 6/	-67.3									-55.4	-55.2	-55.3	115.9
Range	5.4									3.3	3.3	3.3	0
Other 7/	18.9									0	0	0	64.9

- 1/ FLW-Unconstrained
- VPD-Viable Population for Spotted *Owls*
- WSD-Sensitive Watershed Lands
- RIP-Riparian Areas
- NDY-Nondeclining Yield
- DSP-Dispersion
- TES-T&E Species Habitat
- CMI-Culmination of Mean Annual Increment
- MMR-Minimum Management Requirements
- CEE-Constrained Economic Efficiency
- CEF-Common Forest Constraint
- MLV-Minimum Level of Management

2/ Change from MMR

3/ Change from CEE

4/ All values are net of MLV to display induced costs and benefits.

5/ All changes are measured incrementally from the FLW benchmark

6/ FFF and FFP - Net of MLV

7/ WFUD Projects and Facilities

Figure 2.1 displays the contribution to PNF by timber harvest, recreation (developed, dispersed, and ski), and other (water, range, effects of fire, etc).

Figure 21: Contribution to Present Net Value

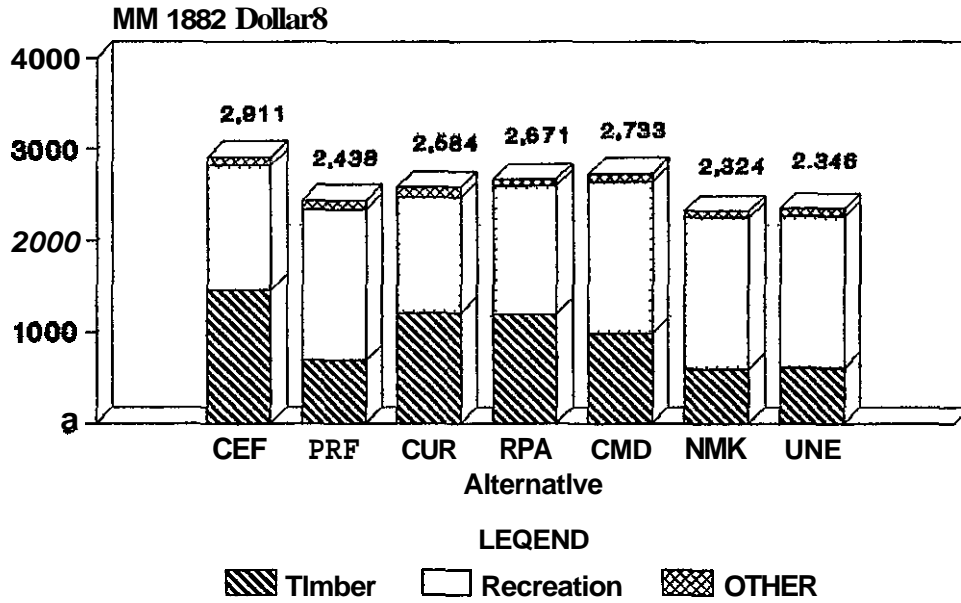


TABLE 2.19 - PRESENT NET VALUE COMPARISONS OF ALTERNATIVES (\$MM)

	CEF	CMD↔	RPA	CUR	PRF	UNE	NMK	MLV
Present Net Value 1/	2911	2733	2671	2584	2438	2346	2324	1359
Change in PNV 2/	0	-178	-240	-327	-473	-565	-587	-1552
Discounted Cost	576	635	542	446	527	502	476	184
Change in Discounted Cost	0	59	-34	-130	-49	-74	-100	-392
Discounted Benefits	3487	3368	3213	3029	2965	2848	2800	1543
Change in Discounted Benefits	0	-119	-274	-458	-522	-639	-687	-1944
Discounted Benefits By Resource 31								
Timber	1864	1401	1523	1510	1004	902	867	0
Recreation	1497	1811	1538	1381	1810	1809	1804	232
Water	69	89	89	83	84	71	68	1369
Range	8	8	12	8	8	8	2	0
Fire Loss	50	59	50	47	59	58	59	-59
Discounted Cost By Cost Category								
Timber	400	417	327	296	319	291	269	0
Recreation	142	154	139	119	154	154	153	3
Roads	86	60	68	61	51	55	54	0
Fire	-55	-64	-55	-50	-62	-66	-62	116
Other 4/	3	68	63	19	65	68	62	65

1/ All figures expressed as net of MLV benchmark and represent induced costs and benefits (willingness to pay).

2/ All changes measured from CEF - Constrained Economic Efficiency alternative with common Forest Constraint

31 Direct comparison of benefits and costs by individual resource provides general indicators of specific relationships, but may be misleading because many costs are inseparable under multiple use management

4/ WFUDs and facilities

Table 2.20 highlights major differences and similarities among alternatives in terms of tradeoffs among priced and non-priced benefits and responses to national concerns and local issues

In Table 2.20 the alternatives are ranked by decreasing PNV (in millions of dollars) in relation to selected quantitative indicators of responsiveness to issues. Also displayed are first and fifth decade average net cash flows and potential local income and employment induced by the proposed alternatives. PNV and net cash flow are indicators of concern to the Federal taxpayer and measure responsiveness to the national issues of economy in government and deficit reduction. Timber production is both a national and a local issue. The other columns display acres regenerated or converted to range, acres meeting preservation, retention, and partial retention visual quality objectives in the fifth decade, and the 5-decade trend in potential spotted owl habitat; these indicators respond to major local issues. The general pattern is that a tradeoff exists between responding to these local issues and the regional and national issues represented by PNV, cash flow, and timber production. Only indicators of local issues that involve major tradeoffs with the national issues are shown in Table 2.20. A more complete display of how the alternatives respond to the planning issues is in Table 2.21.

	CMD	RPA	CUR	PRF	UNE	NMK
PNV 1/	2733	2671	2584	2438	2346	2324
Net Cash Flow						
1st Decade (MM\$)	13 7	12 3	17 1	5 7	3 2	0 9
5th Decade (MM\$)	42 4	52 8	43 5	21 4	17 5	17 8
Potential 1st Decade Income (MM\$)	80 4	79 6	78 7	72 3	66 1	64 7
Potential 1st Decade Employment (Worker Years)	6363	6205	6057	5675	5239	5195
Potential 1st Decade Return to Counties (MM\$)	9 7	9 3	9 5	6 9	6 3	6 0
1st Decade Regenerated & Converted (Acres/yr.)	5953	6980	5070	3865	3343	4930
5th Decade Preservation/Retention/Partial Retention VQO's (M Acres) 2/	174	269	218	501	587	596
1st/5th Decade Spotted Owls (Pairs)	100/59	100/60	100/65	100/65	100/74	100/82
1st Decade Timber Volume (MMBF)	180 1	173 0	173 4 1	142 3 1	110 8	104 9 1

1/ Net of Minimum Level Management (MLV = 1,3588)

2/ Visual Quality Objectives

Summary of Reasons for Change In PNV. The major components of each alternative that cause a tradeoff with PNV are discussed below. (See Appendix D for a full discussion of economic values and net public benefits)

Most of the total variation in PNV, costs, and benefits is attributed to timber and recreation. With few exceptions, the changes in benefits and costs in water, range, roads, and fire are due to a link with recreation or timber (Table 2.19).

Alternative **CEF-Constrained** Economic Efficiency With Common Forest Constraint

PNV = \$2,911 Million

Change in PNV = 0

First Decade Net Cash Flow = \$22.9 Million

CEF represents the least constrained alternative that meets minimum management and implementation requirements. When measured by PNV, the most economically efficient mix and schedule of resource outputs is represented by CEF. Short rotation even-aged timber management would be practiced on most suitable forest land. As explained in Appendix D, PNV is an imperfect measure of economic efficiency because it does not account for non-priced benefits. While it is a feasible alternative, CEF does not respond to the demand for non-priced outputs implied by the public issues. To respond to this demand, additional requirements are imposed on CEF to form the other alternatives and to provide a range of priced and non-priced benefits. Each alternative thus represents a different perception of the demand for priced and non-priced benefits. Because all alternatives share the CEF constraint-set in common, CEF provides a logical basis for comparison. The change in PNV from CEF, therefore, represents an implied minimum dollar value of the additional non-priced benefits provided by each alternative.

Alternative CMD - Commodity

PNV = \$2,733 Million

Change in PNV = -\$178 Million

First Decade Net Cash Flow = \$137 Million

Alternative CMD addresses the public concern for increased intensity of vegetation management for timber outputs. This alternative would decrease timber outputs below the CEF level [Throughout this section the primary reason for restricting timber management practices are given. Acres are approximate. There is rarely a single resource benefit from reduced timber management intensity. The benefit given reflects the thrust of the alternative theme.] However, this alternative would produce more timber than any other alternative to respond to the timber issue and benefit the local timber industry. Direct recipients of these benefits would primarily be those employed in the timber industry, the long-time residents and Native Americans social groups.

Developed recreation expands existing facilities and develops new **sites** to meet demand above CEF level, this increases PNV. All potential developed recreation and downhill ski **sites** would be managed so that no negative impacts on timber production would occur. Wildlife is a major emphasis on 8,000 acres. Harvests are planned in all 32 spotted owl habitat areas on CAS lands (one is in wilderness). Range benefits would remain about the same as in the CEF alternative. Water benefits would be decreased because of their linkage to timber harvest. However, water benefits under this alternative would be higher than under any other alternative over the first 5 decades except Alternative RPA. Range and water yields are most beneficial to the long-time residents' social group.

Alternative RPA - 1980 RPA

PNV = \$2,671 Million

Change in PNV = -\$240 Million

First Decade Net Cash Flow = \$12.3 Million

Alternative RPA addresses public concerns for the level of commodity outputs, recreation, and selected harvest species habitat. PNV is reduced from CEF because output levels for recreation, range, water quality, and wildlife are emphasized to meet RPA targets. Timber management prescriptions would be restricted to be compatible with dispersed recreation objectives on about 42 thousand more acres than CEF. Timber management prescriptions would also emphasize harvest species habitat on about 17 thousand more acres than CEF. Harvests are scheduled in all 32 nonwilderness spotted owl habitat areas (one is in wilderness)

Short rotation even-aged timber management would be practiced on about 70 thousand fewer acres than CEF. Primary recipients of the benefits to recreation and wildlife would be the regional recreationists

Meeting the RPA range target by converting brushland to permanent range would also reduce PNV from CEF, but would benefit the local ranching community.

Water production and its benefit would be reduced from CEF because timber harvest is reduced as described above, although water quality would be enhanced as compared to CEF

Alternative CUR - Current Management

PNV = \$2,584 Million

Change in PNV = -\$327 Million

First Decade Net Cash Flow = \$17.1 Million

Alternative CUR maintains current mixes of commodity and amenity outputs. PNV is reduced from CEF because of reductions in timber management below the CEF level to provide non-priced benefits.

Compared to CEF, timber management practices would be restricted on an additional 51 thousand acres to enhance dispersed recreation, and about 50 thousand acres to enhance visual quality. The primary recipient of these benefits would be the regional recreationists social group. Short rotation even-aged timber management would be practiced on about 111 thousand fewer acres than CEF. Harvests are scheduled in all 32 nonwilderness spotted owl habitat areas (one is in wilderness).

PNV is also reduced from CEF because campgrounds are restricted to existing capacity, which is below the CEF level. The Forest budget is maintained at the current level in this alternative, which restricts opportunities to generate additional benefits.

Alternative PRF - Preferred

PNV = \$2,438 Million

Change in PNV = -\$473 Million

First Decade Net Cash Flow = \$5.7 Million

Alternative PRF addresses public concerns for commodities, recreation, and fish and wildlife habitat. Livestock forage would be higher than the CEF level, which also reduces PNV; this benefits the local livestock ranching community and responds to the range issue.

The recreation portion of PNV is greater for this alternative relative to the CEF alternative because this alternative would expand existing facilities and develop new sites. PNV is reduced from CEF because timber practices would be limited on additional acres to enhance visual quality and dispersed recreation opportunities. Wildlife is an emphasis on 76,000 acres compared to none in CEF. This alternative would also provide additional basal area in mixed hardwood stands compared to CEF. Harvests are not scheduled in 22 of the 32 nonwilderness spotted owl habitat areas (one is in wilderness). The primary recipients of these benefits would be regional recreationist and second-home owners. The primary recipients of the expanded range outputs, the local ranchers, are among the longtime residents social group. Short rotation even-aged timber management would be practiced on about 215 thousand fewer acres than CEF.

Perennial streamside management zones (SMZ's) are considered as varying in width. Perennial and intermittent SMZ's are assigned marginal yields, thus reducing timber yields and PNV.

Alternative UNE - Uneven-Aged

PNV = \$2,346 Million

Change in PNV = \$565 Million

First Decade Net Cash Flow = \$32 Million

Alternative UNE responds to the public concern for the amount of clearcutting and even-age management being practiced on the Forest. PNV is reduced from CEF because of reductions in timber harvest and increased costs associated with uneven-age practices. Short rotation even-age timber management would be practiced on about 321 thousand fewer acres than CEF.

Group selection uneven-age management would be practiced on about 96,000 acres, compared to 0 in CEF. This practice is associated with decreased yields and increased costs, both of which reduce PNV.

Wildlife is emphasized on 76 thousand acres. This alternative would also provide additional basal area in mixed hardwood stands compared to CEF. Harvests are not scheduled in 22 of the 32 nonwilderness spotted owl habitat areas (one is in wilderness).

The primary recipients of the expanded range outputs, the local ranchers, are among the long-time residents social group.

Perennial SMZ's are defined as varying in width. Both perennial and intermittent SMZ's are assigned marginal yields, thus reducing timber yields and PNV.

Alternative NMK • Nonmarket

PNV = \$2,324 Million

Change in PNV = -\$587 Million

First Decade Net Cash Flow = \$0.9 Million

Alternative NMK responds to public concerns for SPNM recreation, water quality, dispersed recreation, and fish and wildlife habitat. This alternative has the next to lowest PNV of the alternatives studied in detail. Amenity values would dominate Forest management in this alternative. Timber harvesting practices would be restricted, compared to CEF, to provide amenities such as visual quality and recreation. Short rotation even-aged timber management would be practiced on about 297 thousand fewer acres than CEF. The maximum amount of land is assigned to **SIA's**, RNA's, and roadless areas. Additional acres are also withheld from timber production due to sensitive watershed lands.

Range production would decrease to nominal outputs by decade 5. PNV is also reduced from CEF because of the reduction in water production that would accompany reduced timber harvest. This alternative would provide the most old-growth and spotted owl habitat. No harvests are scheduled in 29 of 40 nonwilderness spotted owl habitat areas (one is in wilderness). Additional basal area in mixed hardwood stands is also provided. Recreation benefits are higher than CEF because the restrictions on timber management would make campgrounds relatively more economical.

Clearcuts would be limited to approximately 3 acres, and no herbicides would be used. Both of these practices would reduce timber yields and increase costs, thus lowering PNV.

Perennial SMZ's are considered as varying in width. Perennial and intermittent SMZ's are assigned marginal yields, thus reducing timber yields and PNV.

The amenity benefits would be enjoyed by all social groups. The long-time residents social group and others with a commodities interest might be adversely affected by the reduction in timber harvest and forage production.

ISSUES, CONCERNS, AND OPPORTUNITIES

Table 221 summarizes each alternative's response to the TNF issues, concerns, and opportunities (see Chapter 1) in expected outputs and management objectives.

TABLE 2.21 -COMPARISON OF ALTERNATIVES BY MAJOR TNF ISSUES, CONCERNS, AND OPPORTUNITIES

PLANNING ISSUES 1/	OUTPUT OR EFFECT TO BE MEASURED	PRF	CUR	RPA	CMD	NMK	UNE
1 OWNERSHIP & LAND USES In what ways and to what extent can the Forest Service lessen or resolve conflicts between uses on the National Forest private, and other public ownerships within the TNF boundary?	Acres proposed for acquisition first decade	5,000	2,480	2,500	8,000	20,000	5,000
	Fire Protection 2/ Coordination of land-use planning with State and local governments 3/ Miles of property lines marked and posted-first decade Transfer of encumbered NFS lands to other entities to enhance overall Public Interests	1,280	1,200	1,320	1,350	1,150	1,150
2 MINERALS What emphasis should be placed by the Forest Service on the surface management of mineralized areas within the Tahoe National Forest?	Withdraw only areas where major resource conflicts occur Acres of high mineral potential recommended for withdrawal	5,011	0	5,698	127	14,060	5,690
	Provide for mitigation and reclamation of surface resources on mining operations Plans of operation 1st decade	2,000	2,400	2,400	3,000	1,500	1,500
3 ENERGY How should management of the Tahoe National Forest contribute to meeting future energy needs?	Energy Consumption (Billion BTU's/Decade 1)	2,430	3,167	3,166	3,147	2,070	2,290
	Total wood energy potential available (Billion BTU/Decade)	59,500	77,300	77,100	76,900	50,700	56,100
	Energy Minerals 4/		0	0	0	0	0
	Hydroelectric 5/						
4 ROADLESS AREAS How should all inventoried roadless areas be allocated on the Tahoe National Forest	Acres recommended for: SPM designation	44,780	45,850	16,650	44,920	12,750	70,950
	SPNM designation	31,470	52,860	77,035	52,350	151,750	74,000
5 FACILITIES How can the Tahoe National Forest management, operation, and development of its facilities (roads, trails, administrative facilities) be optimized with respect to user interests, resource management and human resource needs, private landowner concerns, and economic efficiency?	Miles arterial, collector and local road construction and reconstruction/50 yrs.	2,050	2,740	2,680	2,680	2,250	2,600
	Number of administrative sites (Govt/leased)	200	200	200	200	200	200
	Miles of trail to be constructed/reconstructed (5a years)	69	54	714	69	69	69

TABLE 2.21 - COMPARISON OF ALTERNATIVES BY MAJOR TNF ISSUES, CONCERNS, AND OPPORTUNITIES (CONT.)

PLANNING ISSUES 1/	OUTPUT OR EFFECT TO BE MEASURED	PRF	CUR	RPA	CMD	NMK	UNE
5 FACILITIES (CONT)	Narrative	Develop to provide a balanced program for timber and recreation	Develop and manage according to Transportation Mgmt. Plan EA & existing road system	Develop and manage to meet RPA outputs	Maximum road system management for efficient timber management	Increase closures and obliterate w/minimum development	Develop to provide a balanced program for timber and recreation
PLANNING ISSUES 1/	OUTPUT OR EFFECT TO BE MEASURED	PRF	CUR	RPA	CMD	NMK	UNE
6. FORAGE, WOOD & SOILS How much area of the Tahoe National Forest should be managed for renewable commodity outputs (forage and wood)? How intensively should vegetation be managed to optimize commodity outputs? What should be the amount, methods, and location of timber harvest and other silvicultural systems? What should be the amount and intensity of forage outputs? What Forest Service emphasis should be placed on the soil resource to maintain or enhance productivity?	Suitable Timber Acres Total	528,474	604,835	580,764	591,944	450,327	528,536
	By Silvicultural System						
	a Special Cutting	159,001	146,381	121,734	132,609	177,327	208,775
	b Long Rotation Even-aged	126,944	121,219	80,806	150,377	121,629	96,863
	c Short Rotation	233,201	337,235	378,224	269,254	151,371	127,192
	d Uneven-age management	9,329	0	0	39,704	0	95,706
	Even-Aged Management First Decade Harvest Volume (MMBF) 6/						
	- Regeneration Volume	1,023	1,409	1,447	1,418	790	412
	- Thinning Volume	132	46	62	132	132	132
	- Special Cutting Volume	140	279	221	139	132	78
	- Unevenage Volume	26	0	0	118	0	491
	Prescription-First Decade Acres Regeneration Cutting						
	- Clearcuts	20,460	28,140	55,501	23,000	36,280	2,570
	- Shelterwood	16,570	10,000	787	34,030	12,630	14,810
Uneven-Age Management Acres of low site conifer intensively managed for Range	1,620	0	0	2,500	0	16,050	
Average Annual AUM's 7/	23,000	20,000	30,400	27,000	1,000	23,000	
% of Total Permanent Range Intensively Managed 8/	75%	25%	80%	75%	0%	75%	
Suitable Range (Acres) Permanent	50,789	50,789	50,789	63,343	50,789	50,789	
Potential Transitory	433,686	464,653	477,188	471,990	387,270	433,686	
Potential Percent Permitted AUM's above or below 1982 level	+15 0	+14 5	+71 0	+35 0	-55 0	+15 0	
Soil Productivity Index 9/	93	100	124	134	13	87	
Relative Risk of cumulative effects on long-term soil productivity 10/	LOW	Low	Mod	Mod	Very low	LOW	

TABLE 2.21 - COMPARISON OF ALTERNATIVES BY MAJOR TNF ISSUES, CONCERNS, AND OPPORTUNITIES (CONT.)

PLANNING ISSUES 1/	OUTPUT OR EFFECT TO BE MEASURED	PRF	CUR	RPA	CMD	NMK	UNE
7 WATER How should the management of Tahoe National Forest resources respond to the demands and allocations for water quality, quantity, storage, and transmission? To what extent should overall watershed integrity & watershed quality (cumulative watershed effects) be influenced by Forest Service activities?	Million Acre-Feet water meeting Water Quality Standards First Decade Next 50-Year average annual water yield increase over 1982 (acre-feet)	20.8 122,000	20.5 129,000	20.8 136,000	20.5 129,000	20.7 105,000	20.7 108,000
	Equivalent Road Acres (ERA) Increase compared to 1977-87 period Acres of Soil and Watershed Restoration & Improvement (5-Decade Total)	+32% 1,900	+41% 500	+60% 2,500	+50% 500	+14% 2,500	+25% 1,900
8 RECREATION To what extent should Tahoe National Forest land be allocated for recreation and scenic purposes? What should be the mix of recreation uses on the Tahoe National Forest land?	Acres of						
	- Preservation	26,912	25,554	25,554	26,179	27,410	26,912
	- Retention	163,100	122,470	120,115	6,781	467,098	194,100
	- Partial Retention	311,400	69,646	123,017	141,490	101,897	365,795
	- Modification	267,146	548,698	499,009	590,940	191,614	181,751
	- Maximum Modification by 5th Decade	25,816	28,006	20,679	28,984	6,355	25,816
	M RVD 11/ 1st Decade						
	- Developed (including ski)	2,268	2,268	2,268	2,268	2,268	2,268
	- Dispersed	2,525	2,925	2,925	2,925	2,925	2,925
	Off-Highway Vehicle Use (Acres within boundaries)						
	- Closed	44,939	19,793	31,798	19,923	220,072	44,939
	- Usable Open	142,103	358,321	164,881	200,312	0	142,103
	Designated Routes Only Summer: Open Over Snow	266,219	194,591	266,097	269,567	171,371	266,219
	Designated Routes Only	50,829	2,082	80,860	71,176	187,125	50,829
	Designated Routes Only Summer, Closed Over Snow	10,705	4,742	4,117	4,117	1,504	10,705
Closed Summer, Open Over Snow	11,018	11,018	10,342	39,541	7,255	11,018	
Designated Routes Only, Closed 11/16 to 4/30	78,823	13,789	46,541	0	17,309	78,823	
Unuseable OHV	189,738	189,738	189,738	189,738	189,738	189,738	
Study and propose river segments to NW&SRS 12/	---	---	---	---	---	---	
Miles of Wild River	38.3	38.3	38.3	38.3	38.3	38.3	
Developed Site 13/ PAOT's Fifth Decade	29,862	14,234	26,217	29,862	26,862	29,862	
Cultural Resource Sites Inventoried Over 50-Year Period	710	620	746	1,073	723	758	

TABLE 2.21 -COMPARISON OF ALTERNATIVES BY MAJOR TNF ISSUES, CONCERNS, AND OPPORTUNITIES (CONT.)

PLANNING ISSUES 1/	OUTPUT OR EFFECT TO BE MEASURED	PRF	CUR	RPA	CMD	NMK	UNE
<p>9 WILDLIFE</p> <ul style="list-style-type: none"> ■ MAINTENANCE OF VIABLE POPULATIONS OF FISH AND WILDLIFE How will populations be maintained overtime? - DIVERSITY What level of protection should be given to Important Forest diversity components? 	<p>Degree of risk for maintaining viable populations of all fish and wildlife as prescribed by NFMA</p> <p>Degree of emphasis on protection of <i>diversity</i> elements</p>	<p>Mod</p> <p>High</p>	<p>High</p> <p>Low</p>	<p>Mod.</p> <p>Mod</p>	<p>Highest</p> <p>Low</p>	<p>Low</p> <p>Highest</p>	<p>Low</p> <p>High</p>

- 1/ These are the major Tahoe National Forest issues, concerns, and opportunities. For a complete discussion of these issues, refer to Chapter 1 and Appendix A of the EIS the Planning Records (1922 16a.7b), and Chapter IV of the Forest Plan
- 2/ The Regional Guide and the Forestwide Management Standards and Guidelines provide Forest direction for fire protection (structural and wildland) for intermingled private lands
- 3/ All alternatives would emphasize intergovernmental coordination of land use planning with the State of California and Nevada, Placer, Sierra, Plumas, and Yuba Counties
- 4/ There are no known significant energy-mineral resources that could contribute to meeting the Nation's future energy needs
- 5/ Forestwide S&G's for all alternatives would allow for hydroelectric development. Proposals would be evaluated on a project-by-project basis. Energy potential shall be considered a National Forest resource in these evaluations.
- 6/ MMBF = Million board feet
- 7/ Average annual Animal Unit Months (AUM's) produced at the end of the fifth decade
- 8/ Percent of total permanent range on the TNF that is intensively managed.
- 9/ Acres treated with soil-imparting activities divided by acres under Alternative CUR. Average for decades 1 through 5
- 10/ Forestwide Standards and Guidelines to maintain long-term soil productivity would be applied to all alternatives
- 11/ MRVD = Thousand recreation visitor days
- 12/ The North Fork of the American River was designated a Wild River by Congress. Other proposals have been evaluated for Wild, Scenic, or Recreation classification, however, none meet the eligibility criteria for further evaluation (see Appendix E)
- 13/ PAOT = Persons-At-One-Time Capacity

TABLE 2.22 - TIMBER RESOURCE MANAGEMENT INFORMATION BY BENCHMARK AND ALTERNATIVE

	Benchmark Max TBR (TBR)	Benchmark Max PNV (FLW)	PRF	CUR	RPA	CMD	NMK	UNE 1/
Suitable Lands (M acres)	632 2/	589 2/	528	605	581	592	450	528
Inventory								
Begin MMCF	1934	1861	1574	1827	1700	1873	1292	1574
Begin CFAC	3060	3160	2978	3021	2927	3164	2869	2978
End MMCF	1560	756	2492	1994	1829	2316	1901	2734
Average Annual ASQ (First Decade)								
MMCF	38 4	69 8	22 0	26 7	266	27 8	16 2	17 2
Percent Begin MMCF	2 0	38	1 4	1 5	1 6	1 5	1 2	1 1
MMBF	251.3	456 7	142 3	173 4	1730	180.1	104 9	110 8
LTSYC								
MMCF	37.4	356	272	37.2	36 0	33 1	17 0	25 3
Percent End MMCF	2 4	4 7	1 1	1 8	20	1 4	0 9	0 9
Decade Met	First	First	81 31	84 31	85 31	92 4/	95 3/	75 3/
Average Annual Net Growth CFIAC								
Present	46.7	440	55.1	451	449	57.1	54.4	56.9
2030	62 6	712	54 3	58 5	587	57 8	42 0	42 8
MMCF								
2030	39.5	42 0	28 7	35 4	34.1	34 2	18 9	22 6
Area and Percent of Surt- able Land by Yield Level								
Full Yield								
M Acres	550	583	233	337	378	269	151	127
Percent Suitable Lands	87	99	44	56	65	46	34	24
50-90 Percent Yield								
M Acres	0	4	136	121	81	190	122	193
Percent Suitable Lands	0	1	26	20	14	32	27	36
Under 50 Percent Yield								
M Acres	82	2	159	147	122	133	177	209
Percent Suitable Lands	13	0	30	24	21	22	39	40
First Decade Harvest								
Clearcut (M Acres)	98	166	20	28	56	23	36	3
Shelterwood/Seed Trees (M Acres)	0	15	17	10	1	34	13	15
Selection 51 (M Acres)	70	0	8	12	10	8	7	18
Harvest Total 61								
Percent Suitable Lands	25	37	17	10	14	17	20	13

Tahoe Timber Management Plan - 1978

Potential Yield 29 1: MMCF/Yr: 189 MMBF/Yr

Average Annual Volume Sold 1979 to 1988: 1403 MMBF

Acres Standard - 299,527, Special - 60,029, Marginal - 104,194, Total - 463 750 (After P.L. 48-425 - Granite Chief Wilderness)

- 1/ Tentatively suitable lands for all alternatives: 629,018 acres
- 2/ Tentatively suitable acres exceeded on the benchmark due to absence of legal constraints
- 3/ Long-term sustained yield not met. ASQ is steady at percent of LTSYC shown
- 4/ Long-term sustained yield not met. Fifth decade ASQ at percent of LTSYC shown
- 5/ Includes special cutting
- 6/ Includes all harvested lands



Hydraulic Mining. Omega Mine, c 1920

CHAPTER 3

THE AFFECTED ENVIRONMENT

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CHAPTER 3 THE AFFECTED ENVIRONMENT

A. INTRODUCTION

The Affected Environment chapter describes the physical setting to be affected by the alternatives. It includes the current management situation. The general Forest description is followed by discussions of the economic, social, and resource environments.

B. GENERAL DESCRIPTION OF THE FOREST

VICINITY

The Tahoe National Forest (TNF) is located in the north central Sierra Nevada mountains in California. The TNF is bounded on the north by the Plumas National Forest, on the east by the Toiyabe National Forest and Lake Tahoe Basin Management Unit, and on the south by the Eldorado National Forest.

Interstate Highway 80 crosses the central part of the TNF and provides primary access across the Sierra Nevada between Sacramento, California and Reno, Nevada.

The TNF includes land in the Counties of Nevada (169,116 acres), Placer (241,229 acres), Plumas (11,313 acres), Sierra (352,222 acres), and Yuba (20,494 acres). The administrative boundary encompasses 1,175,535 acres. Of this total, 381,161 acres are in other ownerships in an alternate section (checkerboard) pattern. Approximately 253,425 acres (32 percent) of the remaining 794,374 acres of National Forest System lands have been acquired through purchase, donation, or exchange within the past 50 years.

The TNF is divided into five administrative units called Ranger Districts: Downieville (212,479 acres), Foresthill (155,975 acres), Nevada City (140,928 acres), Sierraville (164,049 acres), and Truckee (120,782 acres).

The Lake Tahoe Basin Management Unit (LTBMU) was formed in 1973 by Presidential proclamation to provide special protection for the unique features of Lake Tahoe and its watershed. A portion of the TNF (28,833 acres), along with portions of the Toiyabe and Eldorado National Forests, comprise the LTBMU. The LTBMU is not covered by this Forest Plan, although it is still legally part of the TNF. Further mention of the TNF will not include those lands in the LTBMU.

LANDFORM

The elevation of the TNF ranges from about 1,200 feet above sea level in the west to over 9,000 feet along the crest of the Sierra Nevada. Many of the higher slopes and peaks have been glaciated, exposing the hard underlying rock materials with glacial moraines formed along the adjacent slopes and valleys. These landforms are observed in the Sierra Buttes-Gold Lakes area and around Donner Summit. The western two-thirds of the TNF tilt to the west, exhibiting nearly uniform flat ridges which have been dissected by westerly flowing streams.

CLIMATE

The TNF experiences a typical Mediterranean-type climate: warm, dry summers alternate with cool, wet winters. Overall precipitation on the TNF is moderate. Average annual precipitation varies from about 50 inches near the TNF's western boundary to 80 inches at the 6,000-foot level. East of the Sierra Nevada crest, precipitation decreases dramatically to approximately 35 inches per year near Truckee and 20 inches per year near the California/Nevada State line. Most precipitation occurs between November and May in the form of snow on the east side of the Sierra Nevada crest and above 5,000 feet elevation on the west side. Thunderstorms are common during the summer on the east side of the crest and at higher elevations on the west. The west side has extended drought periods at lower elevations.

HISTORIC INTEREST

The western slope of the TNF contains an old and important mining district, commonly referred to as The Northern Mines. This area has numerous historic mining **sites**

The development of these mines and construction of townsites created a demand for sawtimber. In **1869**, timber harvesting increased with access provided by the Central Pacific Railroad. This early demand *for* sawtimber resulted in a large portion of the TNF being harvested. Because of this harvesting, much of the TNF is in young growth stands of timber approximately **80 to 90** years old.

RECREATION

Recreation use is high on the TNF because many areas of high scenic beauty and recreational appeal are located within a short travel distance of the metropolitan areas of Reno, Sacramento, and San Francisco. An estimated eight million residents live within a four-hour drive from the TNF. Some features of special interest that attract visitors to the TNF include: Placer County Grove of Sierra Redwoods, North Fork American Wild River, Granite Chief Wilderness, Donner Camp, the historic emigrant route from Verdi to the Sacramento Valley, and numerous ski areas and reservoirs. Demand for these and other areas creates conflicts in the TNF for camping, picnicking, swimming, off-highway vehicle use, hiking, winter sports, hunting, and fishing.

The proximity to the large, spreading urban populations also increases the use of National Forest System lands for rights-of-way for power, phone, and water lines, fuelwood, access roads, and timber harvesting.

C. THE ECONOMIC ENVIRONMENT

The TNF and surrounding area has a complex social and economic environment. Recognizing this fact, the TNF contracted with David M. Dornbusch and Company to prepare a socioeconomic overview as part of the Analysis of the Management Situation. This overview consists of two documents: The *Socio-Economic Overview for the TNF*, and the Socio-Economic Interrelationship Study, *Central Sierra Forests and the Lake Tahoe Basin Management Unit*. These two technical documents serve as a baseline overview of the existing social and economic conditions which exist in the TNF's zone of influence. These documents detail the socioeconomic structure and relationship of the TNF with local communities. Following is a brief summary of the documents and implications of the study.

The counties of Nevada, Placer, Sierra, Yuba, and Plumas are directly and indirectly affected by TNF activities. In turn, they affect management of the TNF because the population of these counties creates much of the demand for TNF goods and services.

EMPLOYMENT

The major employment sectors in the impacted counties (Table 3.1) are government, manufacturing, retail trade, and services. The retail trade and service industries include employment both from tourism and recreation and from serving the growing *resident* populations. Construction and manufacturing employment are also significant. The portion of retail trade and services employment that results from tourism and recreation is highly seasonal.

TABLE 3.1 • 1979 EMPLOYMENT PERCENTAGE BY INDUSTRY

County	TNF Acres	Govt.	Mfg.	Retail	Services	Other
Nevada	169,116	21.3	13.3	22.1	22.8	20.5
Placer	241,229	21.9	7.7	22.5	20.5	27.4
Plumas	11,3131	30.8	20.8	15.4	10.8	22.2
Sierra	352,222	50.0	22.2	*8.3	8.3	11.21
Yuba	20,494	46.9	9.0	14.8	9.7	19.6
STATEWIDE	--	17.4	20.1	16.6	20.7	25.2

* Includes wholesale

SOURCE. Socio-Economic Overview for the TNF

Table 3.2 summarizes employment in the impacted counties for the wood products industry. Wood products employment constitutes a major share of all manufacturing employment in all impacted counties; it occupies a substantial share of all employment only in Plumas and Sierra Counties. The industry is important because it is a 'basic' or export industry, which brings money into the counties. Nonbasic industries generally support the local populations, but do not bring income into the local economy. Unfortunately, wood products is a highly cyclical industry. The actual logging operations are seasonal, and most of the sector is sensitive to the demand for lumber, which varies with interest rates and construction cycles. One noncyclical aspect is the wood chip market, which satisfies demand for wood pulp. Pulp demand has been steadily increasing at 5 percent per year. Companies with large and efficient chip conversion operations can more easily weather slumps in the lumber market. Given the cycles observed in the impacted counties, this noncyclical operation is not substantial enough to smooth variations in activity for the solid-wood products sector.

Nevada County. In 1979, three industries contained two-thirds of all employment in the County: retail trade, services, and government. Each comprised an approximately equal share of total employment, and was somewhat higher than State averages. Manufacturing employment was well below the State average in 1979, with lumber and wood products accounting for one-third of the manufacturing total.

The retail trade and services sectors are related to the importance of recreation to Nevada County. Several ski areas along the heavily traveled Interstate 80 provide winter recreation. Tourism in the historic Gold Country is increasing. Employment in winter recreation helps balance seasonal unemployment in other industries, and because employment in hotels and lodging is higher in winter than in summer, total employment in winter tourist-related services is higher than that for summer. [Labor Market Newsletter (Planning Edition) Nevada County, 1980-81, California Employment Development Department, May 1980.] Because of tourism and the growing population, services and retail trade are the largest industries.

TABLE 3.2 - EMPLOYMENT IN THE WOOD PRODUCTS INDUSTRY, PERCENT OF COUNTY MANUFACTURING EMPLOYMENT, AND PERCENT OF TOTAL COUNTY EMPLOYMENT, SELECTED YEARS

County	Year	Wood Products- Number of Persons Employed	Wood Products- Percent of Manufacturing Employment	Wood Products- Percent of Total County Employment
Nevada	1960	400	73	17
	1970	400	61	11
	1975	400	47	9
	1980	800	44	8
Placer	1960	700	28	4
	1975	700	40	4
Plumas	1960	900	98	53
	1970	600	80	32
	1975	700	95	33
	1980	900	91	30
Sierra	1960	300	100	72
	1970	300	100	72
	1975	200	100	62
	1980	150	99	44
Yuba	1960	400	61	5
	1970	250	39	4
	1975	700	58	11
	1980	800	66	10

SOURCE. U.S. Department of Commerce

Employment in the wood products manufacturing industry is important in the western part of Nevada County, where lumber and sawmill operations are located. Since 1974, the County's share of all wood products employment has varied from about 8 percent to 4 percent, largely because of the cyclical nature of the industry. Indirect employment generated by the timber industry in other sectors includes employment in logging services suppliers, mechanics, truckers, and consulting foresters.

Employment in construction and mining increased substantially between 1974 and 1979, and constituted 8.4 percent of total employment in 1979. The construction component of this industry is sensitive to changes in the National, State, and local economies. High interest rates have detrimentally affected construction and wood products employment; the primary reason that construction employment has not declined more has been the high growth (and new building) rate in the County.

Manufacturing employment in other than wood products grew to 9 percent of 1979 employment. Jobs in the electronics and computer industries have contributed significantly to the local economy, and may grow in the future. A sizeable increase in finance, insurance, and real estate employment was reported between 1978 and 1979, which can be attributed primarily to increased real estate activity accompanying the high rate of recent population growth in the County.

Placer County. Retail trade, government, and services also dominate employment in Placer County, with retail trade and services accounting for a somewhat larger share than the State average. Transportation and public utilities comprise 10 percent of the County's employment, nearly twice the State average. Employment in wholesale trade is almost half the State average.

Construction employment is higher than the State average at **7.7 percent in 1979**, which is a reflection of steady building activity in support of population growth. Because employment in this sector apparently was not affected by high interest rates, demand for housing in the communities in the western part of the County near Sacramento was strong enough to overcome adverse economic conditions. This demand may be due to homebuying by Sacramento commuters, with a smaller share of all construction being second homes. Also, construction of proposed dams, pipelines, and electronics manufacturing facilities may prevent future slumps.

Generally, employment in the wood products sector has been subject to the same cycles exhibited in Nevada County, except that a smaller share of all employment is devoted to wood products in Placer County. Apparently, stable construction activity in the County has not offset the cyclical nature of the wood products industry.

Agriculture and mining retained the same numbers of employees between **1974** and **1979**, but these figures represent a declining share of total employment. Finance, insurance, and real estate, in addition to services, maintained approximately the same share of all employment by steady growth over the period. Government employment peaked in **1977**, with a **27 percent** share that has since declined in response to State and Federal policies. Service employment has slowly increased since **1974**, while retail trade only increased significantly in **1978** and **1979**. The presence of Lake Tahoe's north and west shores in Placer County, along with the **1-80** corridor, ensure that recreation-related employment will continue to be important. Summer and winter recreation are important to Placer County. Lake Tahoe attracts skiers in the winter and water sport enthusiasts in the summer.

Plumas County. The present economy of the County is geared to the wood products industry and to recreation. Three-fourths of the County is public land. Both manufacturing and retail trade have experienced a gradual rise in total percentage of employment.

The manufacturing sector consists primarily of wood products manufacturing, and the cycles of that industry reflect the declines during **1975** and **1976**. In **1979**, manufacturing added **100** new jobs, primarily in the wood products sector.

The gradual increase in the retail trade and services industries can be attributed to both summer recreation and the County's expanding population. These sectors should be a major source of new jobs as they continue to expand.

The government sector reflects the State in general and has shown a slight decline since Proposition 13 was passed. It still accounts for nearly a third of all employment.

In other areas, agricultural employment declined from **100** employees in **1974** to only **50** in **1979**. Construction appears to be on the rise in both number of employees and percentage of the total market. It has risen from **1.2 percent** in **1974** to **4.6 percent** in **1979**. High interest rates could cause future problems in the industry, which might ultimately affect the lumber industry.

Sierra County. Total wage and salary employment in this County increased 20 percent between **1974** and **1979**. Its major industry in **1979** was government, which represented 50 percent of the total wage and salary employment. The only other industry that provided a substantial percentage of employment was manufacturing, with **20.2 percent** of the total employment. Manufacturing employment in Sierra County is especially heavy in wood products, and yearly totals reflect the cycles of this industry. Other County employment includes Christmas tree farming, cattle ranching, and farming.

Statistics suggest that mining is not presently a significant source of employment, although some officials believe mining employment is important. Recreational mining has become an important activity.

Yuba County. The major industry of Yuba County is government, constituting nearly half of all employment. Half of the government total is military employment related to Beale Air Force Base.

Other important industries are retail trade, services, manufacturing, and agriculture. Agricultural employment is significant because some of the County is in the Central Valley. Agricultural employment declined between

Area	1972	1975	1978	1981
California	\$10,500	\$10,900	\$12,400	\$12,700
Nevada County	8,200	8,500	9,100	8,600
Placer County	8,800	9,400	10,400	10,800
Plumas County	8,700	9,000	9,600	9,000
Sierra county	8,700	8,800	8,400	8,400
Yuba County	7,900	8,600	8,900	9,400

* Adjusted to 1982 dollars.

SOURCE: U.S. Bureau of Economic Analysis, Regional Economics Information System.

County Finances. Under the National Forest Management Act, 25 percent of the revenues collected by the TNF from timber, grazing, recreation, mineral, and other resource uses of the Forest are returned to the counties in which the TNF is located. Each county receives a portion of these revenues based on total TNF acreage within the county. Law provides that these revenues be split evenly between public schools and roads. These payments are commonly referred to as Receipt Act payments. The Receipt Act program includes the Knudsen-Vandenberg Fund and Purchaser Road Credits. Twenty-five percent of the collections from these two categories are included in the base income for the Receipt Act payments to the counties.

Collections from timber accounted for over 90 percent of the Forest's total revenues in 1987. Table 3 4 displays collections in each category between 1983 and 1987

The second Governmental program through which the impacted counties receive revenues because of the Forest is the Payment in Lieu of Taxes Act, administered by the U.S. Bureau of Land Management (BLM). Under this Act, payment is made to counties containing Federally owned land. Payments received under the Act may be used by the recipients for any Governmental purpose. Each of the impacted counties receives payment from the BLM under this Act in proportion to the acreage of Federal lands within each impacted county.

The third program is a State program, the Timber Yield Tax, which is administered by the State Controller. This tax is paid when the trees are harvested and includes the harvest on both public and private lands.

	1983	1984	1985	1986	1987
Timber 2/	\$10,780,758	\$13,993,233	\$8,633,041	\$9,517,032	\$15,846,209
Grazing	15,930	17,5181	17,580	16,532	15,137
Land Use	27,912	33,317	43,925	56,652	90,137
Recreation 3/	444,452	428,953	561,443	504,114	232,712
Power	8,185	11,075	6,927	7,628	8,036
Minerals	189	192	1,754	721	5,955
Admission 4/ User Fees	190,408	246,766	202,584	199,164	144,446
TOTAL	\$11,467,836	\$14,731,052	\$9,467,173	\$10,301,742	\$16,342,632

the TNF, accounting for 19 percent of total County school revenues. The TNF's Receipt Act payments are very important in terms of the County's ability to provide educational services. In the other four impacted counties, the TNF Receipt Act payment provided less than 2 percent of total county school revenues.

ECONOMIC EFFICIENCY

Economically efficient Forest management has not been explicitly required until recent years. The National Forest Management Act of 1976 (NFMA) set forth explicit requirements for economic efficiency analysis of Forest management proposals. While economic efficiency must be analyzed and considered, it is not the sole decision criterion. Although the Forest Service has generally tried to achieve cost-efficient management (lowest possible input cost per unit of output), systematic evaluation of all costs and benefits from practices and activities has been undertaken only in recent years

The measure of economic efficiency applied in formulating and evaluating alternatives is Net Public Benefits (NPB), as mandated in 36 CFR 219.1(a) and 219.12(f). NPB are the sum of Present Net Value (PNV) and nonpriced commodity values. PNV is the difference between the discounted value of all outputs to which monetary values or established prices are assigned and the total discounted costs of managing the planning area. Examples of nonpriced benefits include scenic quality, wildlife habitat, and community stability. Values of some nonpriced commodities are inferred from observations of indicators such as the number of participants, tolerance of congestion, and expense of participation. (Appendix D contains additional discussion of economic efficiency analysis.)

The dominant nonpriced commodities for the TNF are embodied in the planning issues. One function of the public involvement process, which produced the planning issues, was the inference of nonpriced commodity values.

To account for the ultimate subjectivity of the inferred demand for nonpriced commodities, a range of production of priced and nonpriced commodities is provided by the alternatives considered. Within each alternative priced and nonpriced commodities are produced in the most cost-efficient method by maximizing PNV. The major components of PNV on the TNF are timber, recreation, water, and range. Recent trends in these components are discussed below.

Timber. Timber management and production costs have increased in the past decade as less accessible areas of the TNF have come under management. Timber production costs are sensitive to changes in energy, labor, and capital costs, all of which have experienced increases in the past decade. Costs of management and production have also increased as the costs of environmental protection are internalized in the planning, logging, and manufacturing processes. A significant factor in the cost of regeneration is the availability of herbicides for plantation release.

To achieve the goal of stable timber outputs, an even flow of timber is offered for sale. Actual sale volume ranged from 85 to 179 million board feet in the past decade. Harvest ranged from 60 to 160 MMBF as timber operators responded to changing market conditions. Timber values displayed a general increase in recent years, with the exception of the 1979-82 recession. Bid prices in this period still averaged 2-1/2 times appraised values.

Recreation. The costs of developing and maintaining developed recreation sites rose at greater rates than the general trend of the economy over the past decade. The cost increases stemmed from rapidly rising construction and material costs, and higher standard sites designed in response to the demand for more full-service developed recreation facilities. Those increases slowed in the early 1980's, however, because of depressed economic conditions in the construction trade. Also, because of reduced development and maintenance costs, the TNF has emphasized standardized facility designs, high durability and longevity of facilities, and moderation of the high-design standards. The recent recreation management emphasis has also shifted more toward dispersed recreation. This shift includes significant new trail construction, such as the Pacific Crest Trail. Because of the new construction, and upgraded trail maintenance, the quality of the trails and the trail users' recreation experience on the TNF has improved over the past decade.

Conversely, the recreational experience of visitors in developed sites has, in many cases, declined because of the deterioration and overcrowding of facilities (caused by deferring costly new development and maintenance).

Recreation use on the Forest increased from 4 062 MMRVD's (Million Recreation Visitor Days) use in 1972 to 41 92 MMRVDs in 1982 and over 5 MMRVDs in 1986. Population growth in the Reno, Sacramento, and Nevada County areas has contributed heavily to this growth. Also, per capita recreation use rates of these populations in activities such as camping, alpine skiing, and sightseeing have increased. Daily user fees charged in full-service campgrounds increased from \$1.00 in 1972 to \$5.00 in 1987.

Water. Water production on the TNF has not changed significantly over the past decade. During that period, expenditures to maintain water quality have been largely for protection of fisheries, meadow and aquatic ecosystems, and scenic quality. While the TNF does not charge for the use of water from National Forest System lands, its value has increased. This increase has resulted from expanding demand for water for domestic uses, agriculture, industry, and energy production.

Range. The cost of range management is linked more closely to budget than to production levels. Structural and habitat improvements and allotment administration costs have declined on a per-AUM (animal unit month) basis in the past decade as budgets were reduced. AUM production on the Tahoe has risen from 14,500 in 1975 to approximately 20,000 in 1982.

Grazing fees are set to reflect the cost of alternative feed sources and livestock prices. Fees per AUM increased from \$1.17 in 1975 to \$2.58 in 1980, declined to \$1.86 in 1982 and \$1.54 in 1988.

D. THE SOCIAL ENVIRONMENT

ZONE OF INFLUENCE

The management and activities of the TNF influence people living both in the local area and in an extended zone of influence. Nevada, Placer, Sierra, Yuba, and Plumas Counties are directly affected by TNF activities. They are characterized by recent, rapid population growth, a relatively rural living environment, cyclical employment trends, and some dependency on the Forest for revenue and jobs. The extended zone of influence for the TNF is the San Francisco Bay Area, the Central Valley metropolitan areas, and Reno. These market areas have demographic characteristics closer to the State of California than the impacted counties: urban, younger, more minorities. Steady population growth is also expected to occur in the extended zone, but at rates lower than in the impacted counties. Table 3.5 compares the recent population growth of these five counties and projections for the future.

A comprehensive review of the complex TNF social and economic environment is contained in two documents prepared by David M. Dornbusch and Company: The Socio-Economic Overview for the TNF and the Socio-Economic Interrelationship Study, Central Sierra Forests and the Lake Tahoe Basin Management Unit. These two technical documents serve as a baseline overview of the social and economic conditions which exist in the TNF's zone of influence. They present detailed information on the socioeconomic structure and the relationship of the TNF with local communities.

SOCIAL ROLE OF THE FOREST

The Forest has two social roles, provider and protector, and is frequently faced with incompatible role demands. Forest planning attempts to find solutions that are feasible, economically efficient, and which will result in the greatest benefit to the public at large.

As a provider, the TNF supports local communities through land-use permits, easements for utility corridors, electronic sites and roads, and water runoff. The Forest provides economic support through grazing, logging, and recreational concessions. Additionally, the TNF provides a variety of recreational opportunities and open space for an increasingly urban population.

TABLE 3.5 - IMPACTED COUNTY POPULATION PROJECTIONS 1980-2000

Area	1980	1985	1990	1995	2000
California	23,063,700	24,893,900	26,661,400	28,287,700	29,702,100
Nevada County	51,000	65,100	74,300	83,000	91,300
Placer County	119,200	145,200	168,900	192,200	214,700
Plumas County	17,700	20,800	22,800	24,700	26,400
Sierra County	3,300	3,700	4,000	4,400	4,700
Yuba County	49,900	54,900	59,600	64,000	68,300
Impacted County Total	241,100	289,700	329,800	368,300	405,400

Former urban residents are families who have moved from the urban areas to find a quieter, more rural atmosphere. They tend to use roads and recreation developments. In general they favor amenity uses over commodity.

Alternative lifestyle residents are residents from urban areas who generally have a liberal philosophy and feel strongly about environmental protection of natural and human resources. Some are highly effective at mobilizing local and outside resources for specific local environmental issues.

Second-home owners permanently reside in predominantly urban areas, but live in this area part time. Many of these families live on land adjacent to or within National Forest boundaries. Their demands are for permits authorizing special uses of TNF land and for dispersed and developed recreation. Second-home owners want to retain the natural setting of the Forest. Many are relatively affluent, and family income is not closely tied to Forest commodities. 'Natural' values encouraged them to purchase second homes in the area. Commodity uses, such as timber harvesting near their homes, often conflict with their interests.

Regional recreationists are mostly people who live in the Reno, San Francisco Bay, and Central Valley metropolitan areas and recreate in the TNF. Regional recreationists use the high quality recreation facilities on the Forest for a wide variety of activities. These users are very interested in the amenity values of the TNF, more so than commodity production. They desire, however, facilities for both dispersed and developed recreation.

Native Americans comprise two groups, the Washoe and Maidu, who traditionally lived in and used the TNF. Today the Washoe are primarily a Nevada-based group with recognized tribal status. The Maidu are scattered throughout the foothill region and do not have recognized tribal status. The Maidu, however, are organized into local Native American cultural organizations. For the most part, traditional Native American sociocultural activities do not occur on TNF lands. Modern use of the TNF by Native Americans is generally confined to recreational activities. As with individuals from other social or ethnic groups, Native Americans employed in the timber industry are economically dependent upon TNF natural resources to varying degrees.

Both Native American groups are interested in the management of cultural resources in the TNF. Forest projects which involve land disturbance have the potential to damage or destroy cultural resources related to Native American heritage. In addition, the alternate ownership (checkerboard) pattern, specifically activities on private land, influence what some of these groups may or may not be able to do. These alternate private lands may or may not meet the demands of this social group. (Refer to the ADJACENT OWNERSHIPS section for further discussion.)

In summary, over the past years the social group composition has shifted from long-time residents, many with strong economic ties to the Forest, to retirees, former urban residents, alternative lifestyle residents, second-home owners, and regional recreationists. This means the demands for TNF products have shifted from commodity towards amenity uses.

SOCIAL VARIABLES

The impacts of the Forest Plan's alternatives on social groups are measured and analyzed by their effect on the social groups. The indicators used to measure social effects are discussed below.

Lifestyles. This variable includes the ways people live: patterns of work and leisure, customs and traditions, and relationships with family and friends. Forest outputs generate a portion of the jobs and income in the TNF area of influence. By law, 25 percent of Forest receipts go to the counties containing Forest Service land for schools and roads. For many alternatives, the Forest's economic effects will increase county employment and 25 percent receipt shares over the first decade, with the same amount or more in later decades. The local economy, however, is growing from a variety of new employers, and the proportionate share of natural resources dollars is decreasing considerably.

Additionally, aesthetic amenities (e.g., open space, scenery, quiet) and recreation opportunities on public lands are affected by Forest Service decisions.

Attitudes, beliefs, and values. This variable refers to the feelings, preferences, and expectations people have for the TNF and the management and use of particular areas. It may include the social group's sense of freedom or self-sufficiency and their feeling of certainty or uncertainty about the future. The former includes changes in perceived control by outside interests, perceived capability of local government to meet their needs, and the group's sense of whether they can meet their sustenance needs for food, fuel, and shelter from the Forest. Feelings about the future may be affected by rates of change caused by Forest Service management and the predictability of consequences of the change.

Community **stability** and **cohesion** (social organization). Community stability refers to the rate of change with which people can cope without exceeding their capacity to deal with that change. The TNF area of influence is growing rapidly regardless of Forest Service influence. Thus, it is expected that Forest outputs will generate a smaller portion of the total jobs and income, and will have a decreasing effect on community stability.

Community cohesion refers to the unity and cooperation shown by various social groups in the community. A lessening of community cohesion can occur with an influx of people from diverse backgrounds. **Issues** which the Forest must face, such as roadless area uses, can polarize communities into opposing factions, thus decreasing community cohesiveness.

Population growth. Forest Service policy can affect population characteristics, distribution, growth rate, and density. In the TNF area of influence, Forest Service effects on population are minor, although there are concerns that increasing population may exceed capacities of community services and the ecological carrying capacity of the land, resulting in pollution and land-ownership changes.

Community services. The TNF and its users require (1) law enforcement, (2) solid waste disposal, (3) sewage, (4) transportation facilities, and (5) drinking water services from local government. These items are briefly discussed in the following sections as to their specific impacts on the counties. Other social and economic impacts are detailed in the two documents previously referenced on page 3.9.

1. Law enforcement. The beauty and recreational opportunities of the TNF draw many visitors. Campgrounds, ski areas, reservoirs, and the general forested environment attract all types of people. These people also visit the TNF to collect fuelwood under permit and, although illegal, to attempt to cut Christmas trees. The appropriate Sheriff's Department and the California Highway Patrol are responsible, as well as TNF officers, for enforcing the **Minor Forest Transportation Permit** for hauling fuelwood, and the Christmas **Tree Transportation Permit** for Christmas trees and greenery.

Other commodities available on the TNF are fish, game, and mineral resources. The California Department of Fish and Game is responsible for enforcing the fish and game laws and suction dredging permits. (For additional information on this subject, see the discussion under LAW ENFORCEMENT in this chapter.)

2. Solid waste. Visitors to the TNF leave behind considerable solid waste, generally at developed sites. The waste must be hauled to a county-operated landfill. The cost of operating these landfills and the lack of suitable **sites** on private lands create an economic burden to the counties.
3. Sewage. Effluent from developed recreation **sites**, special-use permit sites, and TNF administrative **sites** is all treated by the counties' sewage treatment plants. The method of sewage disposal varies between the east and west sides of the TNF. On the east side of the TNF, sewage from facilities, including ski resorts, along the Truckee River is transported directly to treatment plants by the waterborne system; whereas, in remote recreation areas on the east side and on the west side, vault pumpouts are transported to the treatment plants by truck. In both cases, surplus treatment capacity of the local treatment plants is reduced; however, all the treatment costs are paid by the TNF.
4. Transportation facilities. Funds for construction of roads necessary for management of the TNF's resources are obtained from appropriations and purchaser credits from the appraised rate of timber. The TNF roads generally terminate at a county road or State highway. Recreationists often use these county roads to access the TNF during inclement weather. Their use often causes damage to

the roadbeds, creating an unusually high county road maintenance cost. Although 25 percent of the revenues collected from the sale of resources are returned to the counties for roads and schools, these funds are often insufficient to repair all the damage to county roads accessing National Forest System land. The Forest Service and the counties are identifying issue areas and are negotiating their resolution during transportation planning at the project level.

Use of the Truckee area for winter sports has caused overcrowding of county and State transportation facilities.

- 5. Drinking water.** All developed sites and special-use permits are required to have a periodic testing and monitoring of their water systems. These tests are conducted by Forest Service personnel and county sanitarians. County costs are reimbursed by the TNF or permittee.

E. THE RESOURCE ENVIRONMENT

The following discussion states the current management situation. The TNF is managed on an integrated basis, which means that management decisions affect all resources and are designed to achieve multiple resource objectives.

Management activities affect a variety of resources, and decisions are made only after considering the entire set of ramifications involved. Similarly, single management activities are actually designed to serve a variety of resource objectives. For example, treating lodgepole pine stands with small clearcuts to increase water yield will provide additional wildlife habitat and a wood source for various purposes. Water developments are designed to serve the needs of certain wildlife species as well as domestic livestock. Roads are located to efficiently transport logs from a timber sale area to the mill, but these same roads are also designed to provide access for hunting, firewood gathering, and other recreation activities.

Other relationships are more separated in time. For example, greater diversity of vegetation in different stages of growth leads to a gradual increase in populations of certain animal species, which in turn increases recreation opportunities for viewing, photographing, and hunting these animals. This series of events may take several years to complete, yet it may be entirely the result of a single management activity.

Resources are part of a very complex system with numerous interactions. They are described individually only to emphasize important aspects of the current situation in some type of organized framework. These elements must be conceptually combined to understand the overall current situation on the Forest

AIR QUALITY

Air quality within the TNF is high, and pollution has not been a problem, probably because of the Forest's remoteness, elevation, and the prevailing westerly and southwesterly winds. Short-term effects on air quality within the TNF result from forest and range prescribed fires, usually associated with timber management practices. Slash disposal by prescribed fire is often the least expensive and most energy efficient treatment method. Smoke from these prescribed fires has not been identified as harmful to the environment.

The characteristics of wood smoke as an air pollutant are well documented in the 'Environmental Statement - Forest Reestablishment on National Forests in California' (R-5, USDA Forest Service, 1974). Briefly, the visible cloud of smoke from a prescribed fire consists of water condensed on particulate matter and partly burned carbon. The sulphur content of forest fuel (slash) is negligible, so that essentially no sulphur dioxide is created. The temperatures reached in burning slash are usually too low for nitric oxide to form: thus, the amount of nitrogen oxides produced is very low and cannot be considered important in the production of 'photochemical smog' common to urban areas.

The Forest Service (Pacific Southwest Region) has established an Air Resource Management System (FSM 5153), which is under Regional direction. Under these guidelines, the Forest Service manages all

burning operations to prevent or minimize the penetration of smoke into urban or smoke-sensitive areas. Most of the Forest is located within the Mountain Counties Air Basin, with a small portion of Yuba County within the Sacramento Valley Air Basin. Within these air basins, agricultural burning regulations are implemented by the County Air Pollution Control Officer. All Forest burning projects follow these regulations and Forest Service Manual guidelines. One Clean Air Act Class I area is adjacent to the TNF: the Desolation Wilderness to the south of the TNF boundary. All areas within the TNF are classified as Class II, including the Granite Chief Wilderness.

ADJACENT OWNERSHIPS AND URBAN/RURAL/WILDLAND INTERFACE

Adjacent National Forest System Land

The amount of contrast in management between adjacent National Forests is an important issue. Planning for coordination with and management of adjacent National Forest System land is required by NFMA (16 USC 1604) and by the Forest Planning Regulations (36 CFR 219.7). This coordination is also necessary when deciding land allocation. The degree of difference between the management objectives (management prescriptions) will determine the amount of contrast in the management of adjacent National Forests. Currently, management objectives along contiguous National Forest boundaries are coordinated through the existing Ranger District Multiple-Use Plans, unit management plans, and the subsequent special management plans and decisions.

The TNF adjoins three other National Forests: Plumas, Eldorado, and Toiyabe, as well as the Lake Tahoe Basin Management Unit (LTBMU). Shared administrative duties often occur along Forest boundaries. The TNF, for example, currently administers a small portion of the Plumas National Forest northeast of Bullards Bar Reservoir. Also, the TNF administers grazing allotments for a small part of the Lake Tahoe Basin Management Unit. This shared administration is intended primarily to facilitate efficient, economical management of National Forest System land. The LTBMU and the TNF share the Granite Chief Wilderness. Opportunities for the coordinated management of these lands are extensive.

Adjacent National Forests currently have coordinated management plans, special plans, and project plans. Coordination should continue to ensure that the amount of contrast between respective National Forests is minimized.

Adjacent Lands of Other Ownership

Compatibility between the management of National Forests and the management of adjacent private land is important in reducing conflicts and minimizing contrast in appearances.

The Forest Planning Regulations state that Forest planning activities 'should be coordinated to the extent practicable' with the owners of the 'lands intermingled with, or dependent for access upon, National Forest System lands' (36 CFR 219.6). Existing landownership patterns create an interdependence between the respective owners. The public and private use and development of intermingled private land has frequently predetermined the particular use of adjacent National Forest System land. Examples include public utility lines for electrical power and telephone, gas lines, public and private access roads, water supply systems, fences and pastures, and public service facilities (e.g., solid waste disposal sites and community parks).

Within the established boundaries of the TNF are approximately 381,161 acres of privately owned land, with parcels varying in size from about 5 acres to over 12,000 acres. Additional private land adjoins the TNF's exterior boundary and along interior exclusions (i.e., areas of private land excluded when the TNF was established). More than 2,700 miles of property boundary interface between the National Forest and private land.

The checkerboard pattern of ownership in this area results from the railroad land grants of the 1860's, which were intended to encourage the construction of railroads and schools by granting alternate sections of land to the railroads and the States. The majority of this land is owned currently by timberland managing companies, resulting in about 2,000 miles of property boundary between them and the TNF. Many

cooperative agreements for such things as road construction and boundary surveys have been entered into with adjacent landowners.

Scattered throughout the TNF are smaller parcels and tracts of privately owned land. These parcels are mostly the result of homesteads, Native American allotments, mineral patents, and State school land sales. These small parcels are typically 5 to 100 acres with irregular shapes.

Different landownerships, by themselves, do not create conflict. Different land use objectives often do, even on lands in the same ownership. Opportunities to coordinate with intermingled and adjacent landowners will continue, underlining the importance of developing compatible management objectives between private and National Forest System land.

Recently, more encroachment and trespassing have occurred along the National Forest/private property boundaries, resulting in an active boundary marking and posting program.

Urban/Rural/Wildland Interface

Urban/rural/wildland interface Situations may occur when National Forest System lands are adjacent to private lands that have been, or may be, developed within this planning period for recreation, rural, residential, urban, or commercial uses. When National Forest management objectives differ from our neighbors, the potential for mutual impacts exist. Generally these **urban/rural/wildland** interface situations arise adjacent to private lands described above as small parcels (5 to 100 acres) where the residents have conflicting management objectives and different perceptions about how NFS lands adjacent or near their property should be managed. Typically these lands range from small communities, towns, and subdivisions to scattered rural residences. Some of these residents are concerned that the effects of Forest Service management activities will reduce the value of their property. Residents are also concerned that Forest management activities will have negative effects on water quality, visual quality, and wildlife habitat. As a result of these concerns, often residents are opposed to the following kinds of Forest management activities: timber cutting (particularly clear cutting), prescribed fire, herbicide use, recreation development, OHV use, mining, trespassing by NF recreationists, grazing, and road maintenance. Many people feel the Forest should provide buffers on NFS land. To add to this complexity landowners may have conflicting needs and attitudes about forest land management activities next to them. One landowner may be completely supportive of an adjoining fuel reduction activity while another resident may be totally opposed due to aesthetic concerns or smoke drifting onto their property.

Visual quality objectives have been designated for all lands in the **urban/rural/wildland** interface and the objectives range from modification to retention. Meeting or exceeding adopted visual quality objectives will be helpful in meeting some public expectations by identifying specific visual mitigation measures and techniques that can reduce the visual impact of proposed management activities. While visual impacts are not the only concern in interface situations, most people develop their perceptions as to the positive or negative impact of a management activity based on their initial visual impressions.

Residential and community development of private lands adjacent to National Forest boundaries is expanding. The Sierra Nevada foothill counties are the fastest growing in the State. It is predicted that, through the subdivision of private lands, the number of landowners within and adjacent to National Forest boundaries will significantly increase. The number of land owners with different management objectives and perceptions about how NFS lands should be managed will also increase dramatically. This change will make it increasingly challenging to manage NFS land for multiple use purposes and will result in increasing **urban/rural** wildland interface situations.

The Forest can expect higher mitigation costs and the potential for reduced outputs from management activities, such as timber cutting. On the other hand, the Forest is mandated to manage Forest lands for multiple use outputs and services. Because some of the interface lands are high site and capable of the highest levels of wood production, timber management will continue to be given consideration of future land management decisions. Creating buffers and 'no touch areas' will not meet Forest goals and objectives. Because of the complex range of adjacent landowner desires as well as many Forest goals and objectives, it is expected that most issues will be resolved on a case-by-case basis developed through project environmental analysis and extensive public scoping and involvement. The Forest will need to communicate

a 'good neighbor policy to the landowners on these adjacent lands, while developing innovative ways of accomplishing Forest objectives. It will also be important for the Forest to educate the public about some of the important benefits Forest management activities can provide to adjacent private land. Examples are fuel reduction, fire protection, and timber harvest for insect and disease control. In addition, opportunities exist for the Forest to work with local, county, and State governments in joint planning efforts to resolve many of these potential conflicts. The Forest should also consider developing working relationships with other local entities such as boards of realtors, homeowner groups, and land developers.

Adjacent Public Land - Other Federal, State, **and** Local

The contrast between the management of National Forest System land and that of adjacent Federal, State, and local lands is important. Other Federal, State, and local agencies are being consulted and coordinated with during the current planning and management activities as required by NFMA (16 USC 1604), the Forest Planning Regulations (36CFR 219.7), and numerous other laws and directives. Coordinated land management objectives for the interfaced areas of National Forest and adjacent public land will foster common, more efficient resource management use and protection. Many cooperative agreements exist with other public land managing agencies through joint timber sales, road access management, boundary surveys, fire protection, and, most recently, an emphasis on range management.

Public land administered by several other Federal agencies, the State of California, and local governments, lie within or adjacent to the TNF. The Bureau of Land Management (BLM) administers a small amount of land immediately adjacent to the TNF. In addition, county, city, and special district governments own or control even more diverse types of land dedicated to various uses. Portions of these lands adjoin National Forest System land.

The compatibility (or incompatibility) of management objectives between the TNF and the agency administering the adjoining public lands determines the amount of contrasting management. The BLM, State Land Commission, and Bureau of Reclamation have land management objectives for forest and range land similar to those of the Forest Service. Exceptions exist, however, in which the management of specific parcels of land by these agencies may be in strong contrast with that of the National Forest at certain places along a common boundary.

Opportunities to coordinate management of land along boundaries shared with other Federal, State, and local agencies are considerable. For example, the BLM has a joint management plan with the TNF for the North Fork American Wild River. Coordination of land management objectives and coordination during project development is important to minimize contrasts between Federal, State, and local land. Cooperation between all ownerships and agencies is essential to control and minimize the adverse impacts of forest pest problems.

Coordinated Resource Management Planning (CRMP) is an approach used in California since the late 1970's for land and resource management where individual agency and political boundaries are not limiting, and resource problems are solved based on resource boundaries. The basic CRMP concept is that integrating and coordinating resource uses will result in improved land and resource management with the least conflict among users, landowners, and public agencies. Coordinated Resource Management and Planning is designed to achieve the following.

1. Compatibility between natural resources, energy and mineral resources, livestock production, watershed, wildlife habitat, wood products, and recreation.
2. Improvement of the resources and their perpetuation in a high quality condition.

In summary, the underlying theme of CRMP is 'improved land management through cooperation.' This approach uses the best efforts of the local people involved, private landowners, interested Federal, local, and State agencies, and other specialists. Currently, the TNF is developing CRMP's; however, none are completed.

DIVERSITY

Overview

The Forest uses the term "diversity" to reference the variety of species, habitats and seral stages, and special habitat components. Habitat diversity is usually measured on vertical and horizontal scales. The aggregate of vertical and horizontal habitat diversity is believed to strongly influence wildlife species diversity. Accordingly, management programs that change the landscape (e.g., timber management) can affect Forestwide habitat and wildlife diversity. Habitat diversity is addressed in this section. Wildlife diversity is described in the WILDLIFE section of this chapter.

On the TNF, the diversity issue is most strongly associated with: 1) maintenance of diverse forest seral stages over time, and 2) protection of important habitat elements such as snags, down logs, hardwoods, riparian habitats, meadows and meadow edges, and wetlands. For much of the public, the need to maintain diverse seral stages appears to be focused on the preservation of large tracts of undisturbed land. The principal focus for these "biological reserves" is overmature forests and riparian areas.

Management Direction

The NFMA (Sec 6 (g)(2)(A)) directs Forests to 'provide for diversity of plant and animal communities based on the capability and suitability of the specific land area in order to meet overall multiple use objectives...'. The NFMA regulations (36 CFR 219.3) define diversity as 'the distribution of different plant and animal communities and species within the area covered by a land and resource management plan'. Section 219.27 directs that overall Forest diversity should approximate that which would be expected in a natural forest, and tree species diversity should be similar to the existing Forestwide condition. However, this section also provides that reductions in diversity can occur when needed to meet overall multiple use objectives.

Direction for maintenance of diverse seral stages over time is included in the Regional Planning Guide (pages 4-22 to 4-27). The Regional Guide directs that Forests will maintain at least 5 percent of every major vegetation type in each of 5 to 7 seral stages over time (Sec. 4.F.2.a). When seral stages do not presently meet this condition, Forests are to manage to achieve prescribed levels as soon as practical (Sec. 4.F.2.c). These diversity standards are to be applied at the Forest level. Individual management areas will provide distributions of various vegetation types in proportion to their current availability unless standards and guidelines are developed to assure adequate distribution of seral stages (Sec. 4.F.2.e).

The Regional Planning Guide (page 4-14) directs that, to the extent possible, each planning compartment should be managed to provide an average of 1.5 snags per acre. The standards also specify that 80 percent of the density must be comprised of snags measuring 15 to 24 inches DBH and greater than 20 feet tall. The remaining 20 percent must exceed 24 inches DBH and 20 feet in height.

Hardwood stands are subject to the same direction for seral stage management described above. Hardwood basal area or canopy closure direction is currently lacking.

Direction for management of meadows and down logs is currently lacking. The direction and other information relating to riparian area and wetland management are described in the RIPARIAN AREAS section of this chapter.

Current Situation

The current status of riparian areas and wetlands is described in the RIPARIAN AREAS section of this chapter. The current conditions for the remaining important components of Forest diversity are summarized below:

Overall Forest Habitat Diversity. The Forest has the potential for providing a broad range of diversity conditions. For example, reducing timber harvest and increasing the fire suppression program would yield a Forestwide shift towards mature vegetation stands. Conversely, increasing timber harvest and

prescribed fire programs while reducing fire suppression efforts would result in a shift towards younger seral stages.

The current vegetation pattern on the Forest is clumped and very diverse. Patches of early succession vegetation tend to be concentrated in areas that are easily accessed for timber harvest, and sizeable areas of uninterrupted late succession vegetation usually exist in less accessible areas.

Seral Stages. Seral stages associated with wildlife habitats on the west slope of the Sierra Nevada are important to many individual wildlife species and have been described by Verner and Boss (1980). These descriptions can also be applied to eastside habitats and are summarized below.

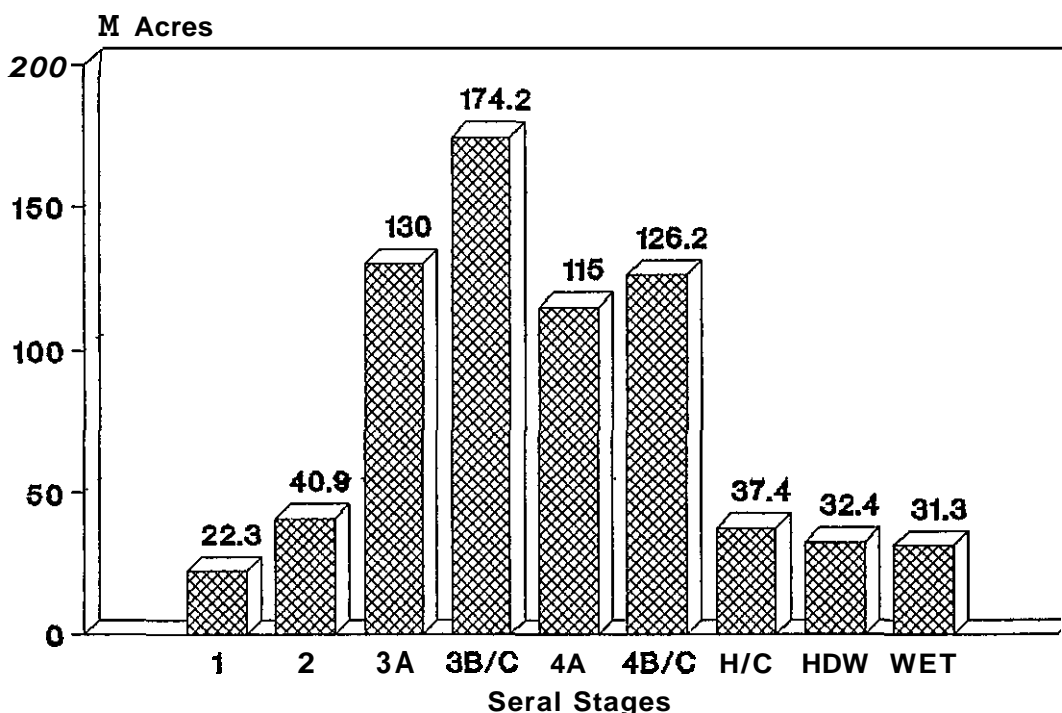
- 1** = Grass/forb stage, consisting of annual and perennial grasses and forbs, with or without scattered shrubs and seedlings.
- 2** = Shrub/seedling/sapling stage, consisting of mixed or pure stands to **20** feet in height.
- 3A** = Pole/medium tree stage, including larger trees in the size range **20** to 50 feet in height. Total tree canopy cover is from 0 to **39** percent. Stands commonly support a substantial shrub layer.
- 3B&C** = Pole/medium tree stage, including larger trees in the size range **20** to 50 feet in height. Total tree canopy cover is 40 percent or greater. Shrub layer is variable.
- 4A** = Large tree stage, corresponding roughly to a mature and overmature classification. Trees generally exceed 50 feet in height, except some of the oak types at lower elevations. Total tree canopy cover is from 0 to **39** percent. Stands commonly support a substantial shrub layer.
- 4B&C** = Large tree stage, corresponding roughly to a mature and overmature classification. Trees generally exceed 50 feet in height, except perhaps some of the oak types at lower elevations. Total tree canopy cover is 40 percent or greater. Shrub layer is variable.

Figure 3.1 displays the current variety and amounts of the important habitats in forested land of the TNF. Approximately 21 percent of the forested land is in early successional stages, 38 percent is in mid-succession, and about 32 percent is in the mature stage. About 4 percent of the Forest is composed of hardwoods, primarily black oaks, and about 4 percent is wetland. Much of the wetland habitat contains mature aquatic vegetation.

Snags. An accurate snag inventory is currently lacking for most areas of the Forest. There are currently 11 local wildlife species that excavate cavities in snags and 33 species that are secondary users of excavated cavities. Current snag densities and distribution are considered adequate to maintain dependent species well above viability thresholds on the west slope of the Forest. Most forested planning compartments on the west slope are believed to meet or exceed prevailing Regional snag retention standards. Most planning compartments in eastside habitats are thought to be below Regional snag standards and may be approaching critically low levels. The Forest is currently evaluating methods for efficiently inventorying snag densities so that prevailing assumptions can be tested.

Down Logs. Inventory information for down log densities is almost completely lacking for the Forest. In unmanaged stands, natural-occurring densities of large down logs (over 20 inches in diameter) probably range from 5 to 20 or more per acre. In regenerated timber stands, down log densities are typically much smaller. Down, woody material is thought to be a critical habitat component for some plant and animal species. However, plant and animal relationships with down logs are poorly understood.

Figure 3.1: Quantitative Relationship of Habitat Types for Tahoe National Forest



Hardwoods The Forest currently has hardwood species on three types of lands. Pure hardwood stands (where conifers comprise less than 10 percent of the crown closure) occupy about 32,400 acres. Hardwood/conifer stands (where hardwoods comprise 51 to 90 percent of the crown closure) are found on about 37,400 acres. Many commercial stands of mixed conifer also have a hardwood component measuring 1 to 50 percent of the crown closure. Data that identify the mixed conifer stands that have a hardwood component are currently lacking.

Black oak and live oak are the predominant hardwood species on the Forest and these species are widespread. Important species that are less common and more localized include tan oak, madrone, aspen, and Brewer oak. Forest hardwood stands are important to a broad array of wildlife. Black oak, live oak, and madrone *are* also important sources of fuelwood and livestock forage. The level of hardwood retention in regenerated timber stands is often a concern during timber sale planning because increasing the amount of residual hardwoods reduces the yield for commercial species

Hardwoods are an important habitat for about 180 wildlife species. Seventy-one of these species are strongly dependent on hardwoods. Mule and black-tailed deer, gray squirrels, band-tailed pigeons, mountain quail, turkey, and black bear are important local game species that are strongly associated with hardwood mast production.

Meadows. The TNF has about 7,100 acres of meadows. On the west slope, meadows are typically small (1 to 5 acres) and are randomly scattered in locations that provide moist, flat terrain. On the east slope, meadows are often very large (20 to 100 acres) and are commonly found on flat sites adjacent to major drainages. On both slopes of the Forest, scattered dry meadows occur randomly where site conditions do not permit establishment of brush and tree species.

Meadows of the TNF are generally in satisfactory condition. They are extremely important to a broad array of fish and wildlife species and provide a significant amount of livestock forage and opportunity for recreation. Localized meadow degradation from past management practices and natural events offers opportunities for enhancement projects in some areas.

Mature and Overmature Forests - The Forest currently contains *about* 600,000 acres of timber-producing lands. Most of these lands were once mature and overmature forest. Many groups and individuals refer to overmature forests as 'old growth'. Although a 'Generic Definition and Description of Old-Growth Forest' has been developed by the Washington Office, specific forest type old-growth definitions have not yet been developed for the Tahoe.

Current timber inventories indicate that approximately 126,200 acres of late successional (4g and 6g strata; see Plan Appendix H) seral stages exist on the Forest. Not all of these acres are expected to meet the definition of *old growth*. As indicated above, there is no current inventory of old growth.

Old-growth forests have many values including providing biodiversity, wildlife and fisheries habitat, recreation, aesthetics, soil productivity, water quality, and industrial raw material. For example, about 72 wildlife species are associated with the old-growth eastside pine forest; about 50 of these species strongly depend on these older habitats. On the westside, about 125 and 75 wildlife species are associated with the old-growth mixed conifer and red fir forests, respectively. About 40 of these species strongly depend on the older mixed conifer habitats and 30 strongly depend on the older red fir habitats.

Existing and Projected Demand

The current and future demands for Forest diversity are very difficult to assess because a consensus definition of diversity is lacking. The NFMA regulations define diversity as 'the distribution and abundance of different plant and animal communities and species'. However, the diversity issue on the TNF is most strongly associated with important habitat elements such as snags, down logs, hardwoods, riparian habitats, meadows and meadow edges, wetlands, and old-growth forests.

It is clear that diversity is an emerging issue in Forest management. Yet, prevailing information is insufficient to allow an accurate assessment of the current and future demands.

FACILITIES

TNF facilities include roads, trails, dams, and *administrative sites*, including utility systems and buildings. The objective of TNF facilities management is to provide support for TNF management activities such as timber production, fire protection, and recreation. Construction and operation of facilities considers energy requirements, economic efficiency, resource development and protection, public demand for Forest uses, and transportation needs of private landowners. Direction for construction and operation of facilities comes from Public Laws, multiple-use and land-use plans, the Code of Federal Regulations, the Transportation Management Program, and cooperative agreements with other government agencies and private landowners.

Roads

The existing maintained road system under TNF jurisdiction is about 2,400 miles. An additional 850 miles within the TNF boundary are under the jurisdiction of counties, the State, or are controlled by private landowners. About 15 percent of the road system serving private timbered land (Sierra Pacific Industries, Fibreboard, and Erickson Lumber Company) was developed cooperatively and is jointly maintained.

Development and operation of the TNF road system are currently directed by ~~two~~ plans: the TNF Arterial/Collector Transportation Plan, approved by the Regional Engineer October 1978, and the Transportation Management Program approved in June 1980. Table 3.6 presents current (1988) road mileages in the TNF by road classification.

TABLE 3.6 - ROAD MILEAGE BY CLASSIFICATION

Classification*	Miles
Arterial	122
Collector	416
Local	1,934

Based on data contained in the TNF Planning File, 90 percent of the total TNF is accessed by roads (accessed is defined as being within 1/4 mile of a road). The arterial and collector system is about 95 percent complete. Part of the remaining development is contingent upon land management decisions within the roadless areas released by the California Wilderness Act of 1984. Timber sale project planning will dictate the road system development, with completion expected in 10 to 30 years. Reconstruction would be a continuing need because of low maintenance funding levels

The transportation system increases by 15 to 25 miles per year. This increase is primarily because of the timber management program, which constructs roads at approximately 0.35 mile per million board feet of timber harvested. Each mile of road constructed removes about four acres of land from resource production.

Average existing density of road access is 0.006 mile per acre, or 3.8 acres of road right-of-way per square mile. The density varies, with higher densities being located in intensive timber harvesting areas and lower densities in nontimbered areas or virgin timberland. The highest density of the existing road system is 6 miles per square mile.

Roads could be constructed throughout the TNF. Appropriateness of construction is an economic, rather than a technical question. Existing roads occur on all slope classes and geological formations. The economic feasibility of constructing and maintaining the roads depends upon the benefits derived.

Trails

The existing trail system comprises 508 miles, according to the TNF's 1982 Transportation System Inventory. A portion of the trail system (26 trails) is regulated by TNF Supervisor's Order 17-79-39 of May 11, 1979, which prohibits use by trail bikes and other off-highway vehicles. This order is incorporated into the 1980 TNF Off-Road Vehicle Management Plan.

The Pacific Crest National Scenic Trail (PCNST) was mandated by Congress in 1968 and is managed according to the Chief's Pacific Crest Trail Management Plan. The trail transects the TNF along the Sierra Nevada Crest for 97.4 miles and was completed in 1983. Off-highway vehicles and mountain bikes are not allowed on the PCNST.

The existing trail system consists of old access trails from the gold mining era, recreation trails, and a few interpretive nature trails. The trails receive many uses, including hiking, equestrian, motorcycle, ATV, and four-wheel drive. The volume of use depends on proximity to population centers or developed recreation areas and the attraction of the destination. User conflicts exist, and current management direction resolves those conflicts where safety or resource damage occurs. The Western States and Tevis Cup Trails are used extensively for a competitive long distance horse race, and for foot races. There is significant public interest in designating these trails under the National Trails System. The trails qualify for National Recreation Trails designation.

Management of the trail system is guided by the Transportation Management Program Environmental Assessment and is implemented through Order 17-79-39. A high-use trail system has been identified. Improvement would be made to meet user demand. Trail planning and operation for special interests, such as off-highway vehicle, skiing, and equestrian uses, would be based on a comprehensive land allocation plan. A separate analysis will be made correlating land capacity, user needs, and user/landowner conflicts on a Forestwide basis for all dispersed recreation travelways.

Dams and Diversions

There are 112 dams within the boundaries of the TNF. The ownership of these dams is as follows:

- 19 Forest Service
- 38 Private or municipal on National Forest System lands licensed for power generation by Federal Energy Regulatory Commission
- 4 Bureau of Reclamation
- 1 Corps of Engineers
- 10 Privately owned on National Forest System lands under special-use permits
- 45 Privately owned and on private lands

The classification for the 19 dams under TNF jurisdiction is as follows:

Class A	Higher than 100 feet, impounds 50,000 acre-feet or more of water.	none
Class B	Between 40 and 100 feet in height or impounds between 1,000 and 5,000 acre-feet of water.	4 dams
Class C	Between 25 and 40 feet in height or impounds between 50 and 1,000 acre-feet of water	6 dams
Class D	Less than 25 feet high or impounds less than 50 acre-feet of water	9 dams

The dams are inspected and maintained periodically depending on the hazard rating. The primary uses are recreation, irrigation, domestic water supply, and power generation. The State of California inspects all non-Federal dams over 25 feet high that impound more than 50 acre-feet of water. The Upper Sardine Dam (Class B) was the only dam owned by the Forest Service considered unsafe. This dam was breached in the fall of 1983.

Administrative Facilities

Currently, 23 administrative sites are on the TNF. Administrative buildings and sites are developed and operated based on resource program needs and their strategic locations. Existing sites and buildings were located to provide housing and office facilities for personnel involved in resource development, recreation, and fire protection. Site location was influenced by access roads and travel times, the need for interaction with local government, visibility to the public, and availability of community support services.

During the next 20 years, substantial investment must be made to provide seasonal and permanent residential facilities for employees. This investment is an integral part of building investment levels I through V, which include mandated maintenance (custodial) dollars and programmed facility improvement and

construction. Deterioration of existing facilities, increasing costs for private housing, geographic shift of work, and travel costs or constraints will continue to increase the need for new facilities. Ongoing feasibility and organizational studies will identify investment and developmental requirements.

Currently, 125 Government-owned buildings are on the TNF, with a total of 165,000 square feet. The existing buildings, particularly residences and those at remote administrative sites, were constructed in the following three periods:

1. Civilian Conservation Corps days, pre-World War II. These buildings account for approximately 43 percent of the current inventory. Many are scheduled for removal or are not presently in use. Building maintenance is disproportionately high because of age and lack of funding for a routine preventive maintenance program.
2. Post-World War II from 1947 to 1965. These buildings were either constructed during this period or were acquired as surplus from military base facilities and moved to the TNF. These are low-standard and, in most instances, are approaching replacement.
3. 1966 to the present. Nine buildings were constructed in recent years. They are generally in an economically maintainable condition and represent our most modern facilities.

FIRE AND FUELS

The fire management policy on National Forest System lands is 'to provide well planned and executed fire protection and fire use programs that are cost efficient and responsive to land and resource management goals and objectives', (FSM 5103).

Although fire protection was not identified as a major issue, it relates to most of the major issues and is an underlying premise to successful land and resource management. The first step to managing a forest is to protect it from catastrophic losses, including fire.

The TNF has wildfire protection responsibility for about 1,237,700 acres, of which approximately 774,700 acres are National Forest System lands, 9,000 acres are public domain lands administered by the Bureau of Land Management (BLM), and about 454,000 acres are State Responsibility Area (SRA) lands.

The TNF protects the SRA lands under a Statewide contract (cooperative agreement) with the California Department of Forestry and Fire Protection (CDF). Under this cooperative agreement, the Forest Service agrees to protect the SRA lands at a level equivalent to that which the CDF would provide if they were protecting them directly. These SRA lands are for the most part intermingled with National Forest System lands and quite often include developments such as homes that make the wildland protection job much more difficult than if it were all National Forest without development.

Conversely, the CDF protects about 19,700 acres of TNF lands that are outside the TNF protection boundary but are covered by the Forest Plan. These lands are located along the western edge of the Forest.

Fire protection has been very effective since 1960, when about 100,000 acres burned on the TNF. In two years (1959-60), almost 10 percent of the TNF protection area (about 120,000 acres) burned over.

Since 1960, about 27,000 acres have burned. The high was 1987, when 12,367 acres burned during what was coined 'The Siege of 1987'. During the 'Siege of 1987' over 600,000 acres burned in Northern California when a widespread lightning storm started over 2,500 fires in about a 48-hour period.

Activity	Number of Fires	Percent	Acres Burned	Percent
Human-Caused	665	48	673	5
Lightning	707	52	13,139	95
TOTAL	1,372	100	13,812	100

This reduction in burned acreage is primarily attributable to an improved fire protection program because the weather during over half of the years during this period was worse than normal throughout the western United States.

In 1988 the TNF experienced a total of 282 fires (81 human-caused and 201 lightning-caused) and a loss of only 536 acres burned. In early September the 49'er Fire started just outside of the western boundary of the Forest on SRA lands and burned to the west and south under a strong, dry northeastern wind. This fire consumed 33,500 acres of wildlands and destroyed about 190 homes and hundreds of out buildings. This same fire, if started farther to the east, would have resulted in added losses to the Forest in addition to what burned on SRA lands.

The current organization is a combination of suppression (initial attack), prevention, and detection resources located at various stations on the TNF. These resources include:

- 10 fire engines with either 3- or 5-person crews.

- 15 fire prevention units having 1 person per unit.

- 4 budgeted lookout towers (four additional towers are operated only during lightning activity or high fire danger days).

- A 20-person Interregional Hotshot Crew

- Four (4) 10-person hand crews.

- An air attack base jointly run by the CDF and the Forest Service at the Nevada County Air Park that includes two S-2 air tankers, an air attack aircraft (Cessna 337), a fire cache, and a fire camp.

Additional resources, including fire engines, hand crews, fixed-wing aircraft (including air tankers), and helicopters, are available from adjacent agencies, such as the CDF, Bureau of Land Management, Nevada Division of Forestry, local Fire Protection Districts, and other National Forests.

Based on the past fire history and the current fire management organization, the expected future average annual burned acres and number of fires by fire intensity levels are displayed in Table 3.8

TABLE 3.8 - EXPECTED ANNUAL BURNED ACRES BY INTENSITY LEVEL

Fire Intensity Level	Average Annual Acres Burned	Average Annual Number of Fires
1	20	92.0
2	73	37.0
3	94	15.0
4	219	3.0
5	404	0.6
6	228	0.3
TOTAL	1,038	147.9

The manipulation and reduction of fuel beds to create a more favorable fire control environment is a key to effective, efficient fire protection of the TNF. The fuels management program on the Forest is primarily working with activity fuels created by management activities (especially timber harvesting). The objective of fuel management is to modify or maintain the resultant fuel levels in a cost-efficient method to meet land and resource management goals and objectives.

Whenever a management activity creates a fuel hazard greater than would exist without the activity, an analysis is required to determine the level of treatment appropriate to meet land and resource objectives. Where practical, the fuels management program, especially all prescribed fires, will be closely coordinated with the CDF vegetation management program. This coordination is particularly important given the intermingled private lands within and adjacent to the TNF.

Vegetative cover types are referred to in fire management as fuel models. The representative fuel models are grouped into the four broad categories of timber, plantations, brush/grass, and barren (no vegetation). The acres of these groupings are shown in Table 3.9

TABLE 3.9 - ACRES BY FUEL MODEL GROUPS

Fuel Model Group	Acres
Timber	604,700
Plantations	35,300
Brush/Grass	113,100
Barren	41,300
TOTAL	794,400

Within the timber fuel model group, an estimated 19,000 acres of fuels generated from management activities before 1975, which do not meet current objectives (backlog fuels), are scattered throughout the TNF. These backlog activity fuels are being treated when possible primarily through other activities such as timber sales, reforestation site preparation, and wildlife habitat improvement projects.

Approximately 8,000 acres of activity fuels are treated annually on the TNF. This treatment includes about 1,200 acres of broadcast burning.

Within the Granite Chief Wilderness and the North Fork American Wild River, prescribed fire by planned ignition in accordance with Forest Service wilderness and fire management policies may be used where necessary to meet resource and management objectives. Prescribed fire by unplanned ignition will not be used until the proper studies have been conducted and management plans developed and approved prescribing and authorizing this activity.

FISH

Fishing is a major recreational activity on the TNF. Eleven major watersheds contain over 1,500 miles of fishable streams, and 22 impoundments hold about 20,000 surface acres of water. Portions of the North Fork American River are designated as a Federal Wild River, and the State of California has designated it as a wild trout stream.

A management plan for wild trout in the North Fork American River was prepared by the California Department of Fish and Game (CDF&G). A habitat plan for the North Fork has been developed by the Forest Service in conjunction with the State's plan for wild trout. These plans form the basis for trout management in this river.

Lavezzola Creek has been designated as a wild trout stream by the CDF&G.

Twenty-one fish species are known to use waters of the TNF. A complete species list and summary of habitat relationships are included in the TNF planning records (192216a.7c). The Lahontan cutthroat trout (LCT) is Federally listed as a threatened species and is a management indicator species for the TNF. A management plan for LCT in California has been prepared jointly and signed by the Forest Service, CDF&G, and the U. S. Fish and Wildlife Service. This management plan is a component of the draft federal recovery plan for the Lahontan cutthroat trout. Action items in the management plan will form the guidelines for overall LCT recovery. Consultation with the U. S. Fish and Wildlife Service on management activities involving or potentially affecting LCT habitat has and will continue to occur. The TNF will be managed to achieve recovery levels for the Lahontan cutthroat trout according to management strategies contained in the final recovery plan.

The existing fishery is primarily cold water fishing, but two reservoirs, Bullards Bar and Sugar Pine, contain largemouth and smallmouth bass, crappie, and catfish. Anadromous fish do not occur in the waters of the Forest because of downstream dams constructed on west side rivers. The major harvest species are rainbow trout, brown trout, and brook trout. Most of the lakes and streams are stocked annually with a variety of the harvest species.

The Forestwide emphasis species for fisheries are rainbow, brown, and brook trout. Kokanee salmon, smallmouth bass, and largemouth bass are site-specific emphasis species because of their limited occurrence on the TNF. Forestwide emphasis species are used to guide and monitor Forestwide management. Site-specific emphasis species are used for project coordination in localized areas where opportunities exist to improve their habitats.

About 90 percent of the TNF's existing waters have been inventoried to assess their fisheries potential. Table 3-10 summarizes the quantity and quality of fish habitat. At present, about 73 percent of the impounded waters and about 49 percent of all flowing waters have good quality fish habitat. The total production of trout within all TNF waters is about 256,000 pounds. The breakdown for the emphasis species is 120,000 pounds for rainbow trout, 64,000 pounds for brown trout, and 72,000 pounds for brook trout.

TABLE 3.10a - SUMMARY OF EXISTING FISH HABITAT FOR THE TNF - LAKES, RESERVOIRS, AND PONDS

TYPE (Surface Acres)	NUMBER OF WATERS	TOTAL SURFACE ACRES	Habtat Quality* Good	Habltat Quality* Fair	Habltat Quality* Poor	Habitat Quality* Unknown
Large Lake (501-2000)	3	2,462	2,462	0	0	0
Medium Lake (51-500)	6	862	440	0	0	422
Small Lake (6-50)	67	885	298	118	116	353
Major Reservoir (2000+)	2	8,254	8,254	0	0	0
Large Reservoir (501-2000)	8	5,714	2,735	2,979	0	0
Medium Reservoir (51-500)	14	1,596	809	646	141	0
Small Reservoir (6-50)	26	569	53	261	59	196
Pond (<1-5)	96	289	49	44	32	164
TOTAL	222	20,631	15,100	4,048	348	1,135

**TABLE 3.10b - SUMMARY OF EXISTING FISH HABITAT FOR THE TNF - RIVERS AND STREAMS
[In Miles (MI) and Surface Acres (SA)]**

Type/Width	# of Waters	Total MI	Total SA	HABITAT QUALITY*					
				Good		Fair		Poor	
				MI	SA	MI	SA	MI	SA
Medium River (101'-300')	1	16	193	0	0	16	193	0	0
Small River (21'-100')	24	213	1,288	108	655	92	558	13	75
Large Stream (8'-20')	107	621	1,505	342	830	228	552	51	123
Small Stream (<8')	213	559	542	249	242	250	242	60	58
Intermittent Stream	18	29	28	0	0	27	26	2	2
TOTAL	363	1,438	3,556	699	1,727	613	1,571	126	258

NOTE Includes both public and private rivers and streams within the Forest boundary.

* Habitat quality is defined as follows

Good - Lacking induced (erosion, siltation) or natural (barriers) problems, and having high fish productivity as indicated by stream survey results.

Fair - Good channel stability and moderate induced impact, **but** having low flows or isolated areas of low productivity.

Poor - Having combinations of factors that will lower fish productivity (erosion, cattle use, low flows, heavy fishing pressures).

Table 3 11 summarizes the quantity, quality, and habitat improvement potential for the trout emphasis species. Rainbow trout are the most prevalent species Forestwide and are probably the most sought-after by fishermen.

TABLE 3.11a • FISHERIES QUANTITY, QUALITY, AND HABITAT IMPROVEMENT POTENTIAL FOR THE TNF - LAKES, RESERVOIRS, AND PONDS (in Surface Acres)

Species	Quantity	Quality 1/ Good	Quality Fair	Quality Poor	HIP High 2/	HIP Medium	HIP Low
RAINBOW	18,141	14,145	3,874	122	1,669	10,774	5,698
BROWN	12,663	9,162	3,360	141	730	7,131	4,802
BROOK	12,580	11,414	1,072	94	1,481	8,876	2,223
LCT3/	1,493	1,493	0	0	725	768	0

TABLE 3.11b • FISHERIES QUANTITY, QUALITY, AND HABITAT IMPROVEMENT POTENTIAL FOR THE TNF - RIVERS AND STREAMS [In Miles (MI) and Surface Acres (SA)]

Species	Quantity		Quality Good 1/		Quality Fair		Quality Poor		HIP 2/ High		HIP Medium		HIP Low	
	MI	SA	MI	SA	MI	SA	MI	SA	MI	SA	MI	SA	MI	SA
RAIN- BOW	528	1,298	309	747	192	1,517	27	34	88	168	175	461	265	669
BROWN	112	288	81	203	31	85	0	0	15	40	20	70	77	178
BROOK	169	374	92	257	77	117	0	0	18	29	72	155	79	190
LCT 3/	6.3	8.9	6.0	8.6	0.3	0.3	0	0	4.3	4.0	2.0	4.8	0	0

- 1/ Fish habitat quality for lakes, reservoirs, and ponds is defined as follows:
- Good - Nutrient levels are not limited for fish populations, pollution is not a detectable concern
 - Fair - Fish populations limited by some factor (food, oxygen, winter freeze), some pollution detectable
 - Poor - Eutrophic, marginal habitat, fish survival would require constant stocking, pollution contributing to degradation

Fish habitat quality for rivers and streams is defined as follows.

- Good - Lacking induced (erosion, siltation) or natural (barriers) problems and having high fish productivity as indicated by stream survey results.
- Fair - Good channel stability and moderate induced impact, but having low flows or isolated areas of low productivity.
- Poor - Having combinations of factors that will lower fish productivity (erosion, cattle use, low flows, heavy fishing pressures).

- 2/ Habitual improvement potential (HIP) is defined as follows:
- High - Critical habitat deficiencies that need to be corrected through improvement projects.
 - Medium - Habitat deficiencies are present but are not in critical need of correction.
 - Low - Very few habitat deficiencies are present and those that do occur are minor

- 3/ LCT - Lahontan cutthroat trout

Table 3 12 indicates that about 70 percent of all impounded waters and 50 percent of stream habitat can be improved to some degree for rainbow trout (in lakes, rivers, and streams with high and medium habitat improvement potential). Approximately 60 percent of the lakes and 30 percent of the stream habitat can be improved for brown trout. For brook trout, about 80 percent of the lakes and 50 percent of the stream habitat can be improved. The potential for the other fish species is presently unknown.

TABLE 3.12a - HABITAT IMPROVEMENT POTENTIAL FOR FISH SPECIES (Expressed as a percentage of the total known quantity) - LAKES, RESERVOIRS, AND PONDS

Habitat Improvement Potential * (Surface Acres)

Indicator Species	High	Medium	Low
Rainbow	9%	59%	32%
Brown	6%	56%	38%
Brook	12%	70%	18%
Lahontan cutthroat trout	49%	51%	0%

Indicator Species	High	Medium	LOW
Rainbow	17%	33%	50%
Brown	13%	18%	69%
Brook	11%	42%	47%
Lahontan cutthroat trout	68%	32%	0%

- * Habitat improvement potential is defined as follows
- High** - Critical habitat deficiencies that need to be corrected through improvement projects
 - Medium** - Habitat deficiencies are present but are not in critical need of correction
 - Low** - Very few habitat deficiencies are present and those that do occur are minor

If implemented, these improvements would result in the following approximate increases:

Lakes	Streams
Rainbow - 28,000pounds	Rainbow - 24,000pounds
Brown - 17,000pounds	Brown - 4,200pounds
Brook - 24,000pounds	Brook - 7,000pounds

Thus, a vigorous habitat improvement program for all lakes, rivers, and streams could increase rainbow, brown, and brook trout by 104,200 pounds

The TNF has an adequate inventory of fish habitat on the Forest, but current, accurate information regarding population estimates and trends is extremely limited. We suspect that the trends for harvest species are relatively stable because of the annual stocking effort.

Table 3.13 indicates the extent of our knowledge regarding fish supply and the TNF's ability to meet demand. The data that is available is better than 50 percent reliable, but is not statistically valid.

TABLE 3.13 SUPPLY AND DEMAND FOR THE FISHERIES EMPHASIS SPECIES ON THE TNF

SPECIES	CATEGORY	CURRENT PRODUCTION POTENTIAL	CURRENT POPULATION TREND	ABILITY TO MEET DEMAND
Rainbow trout	Harvest	120,000 lbs.	Stable	Unknown
Brook trout	Harvest	72,000 lbs.	Stable	Unknown
Brown trout	Harvest	64,000 lbs.	Stable	Unknown

The demand for trout should increase approximately 22 percent during the next decade. The RPA objective for the Forest is to increase the resident trout habitat capability 20 percent. If the TNF were to be totally dedicated to fish production and each acre was producing to the maximum, the demand for both consumptive and nonconsumptive use could be met during the planning period. Under current management levels, a portion of the demand would be met during the planning period, but how much is not known. Indications based on past demand suggest stressing the management of consumptive species. The management level needed to meet most of the demand and address RPA targets is somewhere between current fish management intensity and maximum production.

Fish management, under multiple use, can act as a constraint to other Forest management activities not directly related to fisheries, and can itself be constrained by other activities. For example, the transportation system can impact fisheries by roads that cross or parallel rivers and streams that have a viable fishery. The roads could increase sedimentation in the fishing stream. Expansion of roads into wetlands or through riparian areas can lead to a loss of these environments. In short, any activity that takes place on the Forest may positively or negatively affect the fish resource, although some impacts are more serious than others.

The following major fishery concerns relate to the basic issue of fish habitat productivity, quality, and diversity:

- o Continuing protection and possible expansion of the Lahontan cutthroat trout habitat.
- o **Reservoir** construction that eliminates wetland, riparian, and other key habitats.
- o Water diversions that reduce stream flows below the level needed to support fish production.
- o Water temperatures that increase beyond the limits of cold water fish tolerances.
- o Siltation of spawning areas.

These concerns occur in specific situations on the TNF. In some cases, fish production is being limited as a result (e.g., stream barriers, competition by nongame species). The greatest potential opportunities to increase fishery production include mitigation of water diversions, improvement of instream fish habitat, and enhancement of riparian areas to provide shade, canopy cover, and long-term woody debris sources where none now exists.

FOREST PESTS

Pest Damage

Insects, diseases, plants, and animals damage trees and other forms of vegetation. Damage includes mortality, reduced growth, reduced tree quality, top killing, degradation, and reduced quantity and quality of seed production. If the damage affects the attainment of land and resource management goals and objectives, the destructive agents are considered pests. In addition to plants, humans can also be affected by pests, such as poison oak or plague-infected rodents in recreation areas.

Pest damage can vary by year and by place within the Forest. Damage is frequently the result of several pests and environmental factors acting together, rather than the result of a single pest. Common insect and disease complexes on the Forest include root disease-bark beetle and dwarf mistletoe-bark beetle. Damage from these pests is often accentuated during severe environmental conditions, such as drought, and by certain stand conditions, such as overstocking. In general, these pests, along with their natural enemies (parasites and predators), are a part of the environment and have adapted to exploit certain ecological niches or conditions during a forest's development. In addition, pocket gophers cause damage to about 10 percent of the reforestation acres. (See the TIMBER section of this chapter for a discussion of competing vegetation as part of the Forest pest complex.)

In recent years, the average annual pest-related mortality on Northern California National Forests has ranged from a low of .06 tree per acre (4.7 cubic feet per acre) to a high of 1.37 trees per acre (285.0 cubic feet per acre). On the TNF, salvage sales annually remove approximately 8 to 10 MMBF, and sanitation and thinning, conducted in part to reduce the potential for pest-related damage, could remove another 5 to 20 MMBF depending on existing market conditions for forest products. Estimates of losses because of growth reduction and decay are difficult to obtain and are currently unknown.

Integrated Pest Management

Under the Integrated Pest Management (IPM) approach, the level or intensity of pest management practiced would vary to meet the needs (resource management emphasis and targeted outputs) of each alternative. For example, alternatives that involve high levels of vegetation management and high resource outputs would both require and provide the opportunity for implementing high levels of IPM. High levels of IPM would involve frequent surveillance, detection, and reporting; a high level of pest management training for Forest personnel directly involved in resource management, an increased number of site-specific biological evaluations, and an increased likelihood, directly related to the high resource output targets, of directly controlling pests. In addition, the timely use of new methodologies and close coordination with pest management research would be very important. A high level of IPM would also mean increased opportunities to integrate pest management considerations into resource management decision making and to implement preventive actions, including vegetation management, which should, through time, reduce the need for future direct control projects. Alternatives with lower resource outputs and less vegetation management would require **less** frequent pest management activities and would also provide fewer opportunities to implement preventive strategies.

An IPM approach is used to prevent and reduce pest-related problems on the TNF. Under this approach, pest management is an integral part of resource management, and insects, diseases, plants, and animals are recognized as established elements of forest and range ecosystems. They are considered pests only when they cause unacceptable damage by interfering with the attainment of management goals and objectives or when they endanger public health. For each specific pest situation, on a case-by-case, site-specific basis, a full range of pest management alternatives, including a 'no action' alternative, would be considered in accordance with NEPA requirements. The preferred course of action is selected on the basis of biological effectiveness, cost efficiency, and human health and environmental safety.

In Forest planning, the IPM approach is implemented in all alternatives at levels necessary to minimize unacceptable damage. Integrated Pest Management activities include prevention, detection, evaluation, suppression, and post-action evaluation. Prevention and suppression activities consider a full range of techniques, including chemical, biological, mechanical, manual, silvicultural and prescribed fire for each pest situation. The goals and objectives, management intensity, and resource emphases of each alternative

determine the intensity or level at which IPM should be implemented to minimize unacceptable damage. Additionally, when appropriate, commitments will be made to participate in TNF pest management and IPM demonstrations, pilot projects, and field experiments.

The protection goals of TNF pest management are to establish and maintain an effective dynamic surveillance system within the concept of the detection component. The TNF also will be aggressive in implementing sound, safe, and effective preventive measures to keep potential pest problems to a minimum commensurate with resource goals and objectives. These objectives will be achieved by implementing IPM, which will provide protection of forest resources with the least hazard to people, their possessions, wildlife, fish, and the environment. These objectives include the following:

- o Managing the TNF's resources in a way that discourages pest problem development and persistence.
- o Prudent timing of treatments.
- o Demonstrating effective and workable IPM practices and strategies and encouraging their acceptance.

GEOLOGY

Geologic Hazards

Potential geologic hazards within the TNF include landslides, earthquakes, and ash fall from distant volcanic eruptions. Of those three types, landslides are the most common and most frequently affect Forest management. Shallow debris slides are the most common and most destructive type of landslide found on the TNF, but deeper mass movements, road cut failures, stream channel instability, and rockfalls also occur. These various types of slope movement, whether human caused or naturally occurring, can affect water quality, fish habitat, land productivity, visual quality, human safety, structures, utilities, and roads.

Land instability is not extensive on the Forest. Most instability features are found in the steep canyons and inner gorges in the lower elevations of the western part of the Forest. Preliminary landslide hazard work shows a higher rate of occurrence of landsliding in various contact zones beneath the Meherten Formation (volcanic mudflows), more often on north facing slopes where springs occur. Much more work is needed to verify this hypothesis and identify the zones with the highest risk of failure. The Forest is currently working on a Forestwide Geologic Hazards and Resources Inventory (GRI), which will identify landslide and seismic hazards, and discuss volcanic hazards. Geologic resources will also be identified. In lieu of a completed GRI, hazards and resources have been identified, analyzed, and where appropriate mitigated or developed whenever recognized as issues on a given project.

The potential for reactivation of dormant features under natural conditions is considered to be greatest within the inner gorge, and to a lesser extent along the steep canyon slopes where streams actively erode the toe of dormant landslides. Under natural conditions, dormant landslides are most likely to be reactivated by stream undercutting and/or during periods of heavy rainfall. The potential for reactivation is dependent on site-specific conditions such as groundwater, slope inclination, and the nature of the underlying materials.

Under 'altered' conditions such as vegetation manipulation, road excavation, mining operations, or hydroelectric developments, existing landslides are sometimes reactivated or new landslides are triggered. The more land-disturbing activity in soil and rock types sensitive to land instability, the higher the likelihood of altering the equilibrium of the slopes and thereby causing landslides.

The concern, therefore, is to prevent mass earth movement or soil loss associated with performing management practices on lands with geologic hazards.

In the past, timber harvesting and road building on the TNF have avoided much of the steepest and most unstable ground. Increasing demand for timber, minerals, and hydroelectric development requires

access to the more remote, steeper, and often more unstable ground. Consequently, the need for land stability inventory and analysis will increase.

Although considerable volcanic activity has occurred on the TNF through geologic time, no active or dormant volcanoes now exist, nor are there indications of future volcanism. Signs of possible volcanic activity occurred recently in the Mono Basin-Long Valley region to the south, and to the north. Lassen Peak erupted as recently as 1921. Should future eruptions occur in these areas, the TNF could be covered by air-fall ash; however, because of prevailing wind directions, the probability of any significant ash deposits is low and is not considered a management concern.

Geologic Resources

Potential geologic resources include rock and soil materials for construction purposes, geologic Special Interest Areas, and groundwater.

Rock and earth construction materials are used in the construction of the Forest transportation system's roads, recreational facilities, and in various watershed restoration and wildlife projects. Road construction design methods call for balanced quantities (cuts and fills) and some surfacing materials (native soils, rock aggregates, or paved surfaces) to protect the environment or road investment.

The Forest has prepared an inventory of potential rock and soil materials sources which are considered for use on a project basis. Historically, most aggregate needs have been filled by commercial sources within or near the Forest boundaries. Each year the Forest has constructed approximately 4 to 9 miles of surfaced roadways requiring nearly 1,800 tons of rock materials per mile. Sufficient sources of rock and soil materials exist on the TNF and from commercial sources to meet needs for many decades.

Two potential geologic Special Interest Areas (SIA's) are proposed under some alternatives: Glacier Meadow geologic area and Devils Postpile geologic area. Other areas exhibiting unique or noteworthy geologic features may be identified in the future. Geologic SIA's are discussed in more detail along with other SIA's in the SPECIAL INTEREST AREAS section.

Groundwater is available on the TNF primarily in small isolated basins, in alluvial and landslide deposits, and in deep bedrock fracture zones or porous layers. Wells and springs are needed to serve campgrounds, administrative sites, and watering ponds or troughs. Forest lands serve as recharge areas for downstream underground reservoirs called aquifers. Geologic or geotechnical studies can aid in locating the most likely sources for development. Further discussion of the groundwater resource can be found under the WATER section.

HISTORICAL AND CULTURAL RESOURCES

The management of cultural resources was not identified as a major issue to be considered in the TNF Plan. The TNF is, however, charged with managing cultural resources as a nonrenewable resource to maintain their scientific, historical, and social integrity.

Current Direction

A number of laws, Executive Orders, and regulations provide direction for the TNF cultural resource management program. These have been codified in FSM 2361 as objectives, policies, and responsibilities. Briefly, the TNF is charged with conducting an inventory of resources located within the Forest, evaluating resources for their eligibility for the National Register of Historic Places, and managing those resources with historical, scientific, or social significance. Protecting cultural resources on the TNF has not, to date, measurably affected the management of other resources.

The TNF fosters and maintains relationships with the California Office of Historic Preservation, the President's Advisory Council on Historic Preservation, local universities and colleges, Native American tribes and organizations, historical societies, and other parties interested in the cultural resources of the TNF. The relationship with the California Office of Historic Preservation and the President's Advisory Council on

Historic Preservation is formal and involves regular consultation as specified by 36 CFR 800. TNF cultural resource activities are also coordinated with the California State History Plan and the Statewide Archaeological Site Survey.

Consultation with Native American tribes and organizations occurs whenever Forest management decisions may affect cultural resources of interest or concern to Native Americans. Such resources may be religious areas, archaeological sites or artifacts, or areas traditionally used for specific purposes by California Native Americans. The TNF is directed by the American Indian Religious Freedom Act to ensure that its policies and procedures do not infringe upon Indian religious freedom.

Inventory

The inventory of locations containing evidence of historic and prehistoric use of the TNF has been the primary objective of the cultural resources program. Inventory work is accomplished in conjunction with other Forest projects such as timber sales and recreational developments. Resources identified during inventory are evaluated for their eligibility for the National Register of Historic Places. Those which meet the eligibility criteria are protected from disturbance by activities and developments, and are managed to maintain their historic, scientific, or social values.

The inventory of the cultural resources located within the TNF began in 1972. Approximately 25 percent of the Forest (218,000 acres) has been examined. This inventory work has succeeded in locating over 1,550 cultural resource sites. Of these, over 900 represent historic sites characteristic of early day mining, logging, homesteading, and ranching activities. Prehistoric sites total over 650 and represent use and occupancy of the Forest by California Native Americans and their ancestors. The following cultural resource sites are presently listed in the National Register of Historic Places:

Hawley Lake Petroglyph Site
Kyburz Flat Archaeological Site
Meadow Lake Petroglyph Site
Sardine Valley Archaeological Site
Stampede Archaeological Site
Oregon Creek Covered Bridge Historic Site

In addition, over 330 sites have been found to meet the National Register of Historic Places eligibility criteria. These criteria are the principal ones used to evaluate the significance of cultural resource sites on the TNF.

A synthesis of Forest history and prehistory has been prepared that details the nearly 10,000 years of human occupation of the TNF. This synthesis is based on data gathered from published historical sources, unpublished manuscripts, diaries, records, oral histories, and the results of archaeological surveys and excavations.

The gathering and analysis of these data were guided by principles that reflect a belief that human culture and human history represent complex and dynamic systems. The history of human use of the TNF is viewed as a dynamic, evolving phenomenon. The economic, political, social, technological, and ideological aspects of cultural systems are of principal interest. Through the study of the dynamics and evolution of these systems, we come to learn about past societies and how modern cultures change, evolve, and survive.

Human History

Knowledge of the time preceding the coming of the first white settlers stems primarily from archaeological studies of ancient villages, seasonal camps, and other locations inhabited prehistorically. These studies indicate that native people began to live in the TNF soon after the last glacial age, nearly 10,000 years ago. These people were skilled and specialized hunters who found the area rich in game and other resources. Over a period of time, the economics of these prehistoric peoples diversified, and by 2,000 B.C. the TNF was home for a large human population whose culture was specialized, complex, and elaborate.

When the first settlers arrived in the 1840's the TNF area was occupied by two tribes, the Washoe and Nisenan (Maidu). The Gold Rush of 1849 brought about dramatic changes in the native cultures, as it did elsewhere in California

Gold mining was the principal industry in the TNF through the 1880s. Many of the area's modern communities began as early gold camps. With the completion of the transcontinental railroad in 1869, an extensive lumber industry developed. Much of the TNF's forested land was cut over between 1880 and the mid-1930's. The Truckee region, which experiences exceptionally cold winters, was the location of one of California's largest natural ice production industries in the late 19th and early 20th centuries.

Management Opportunities

Cultural resources are especially vulnerable to disturbance because, once disturbed or damaged, the information lost is irreplaceable. Vandalism of cultural resources is a major concern. The large amount of private land within the TNF boundary and the ease of access to most areas of the Forest have contributed to an ever-increasing vandalism problem. Bottle and relic collectors have systematically disturbed historical sites. Disturbance stems from the use of metal detectors and shovels to obtain artifacts, and in some cases heavy equipment is used. A comprehensive program of public education, site enhancement, 'antiquities' signing, frequent patrolling, and site monitoring will be necessary to reduce vandalism.

A major objective of the cultural resources program has been the identification and protection of cultural resources threatened by Forest projects. This represents a base-level management strategy. Higher levels of management in the future may include developing specific cultural resources into interpretive displays for public education and enjoyment, and intensifying efforts to obtain scientific information through archaeological studies. The initiation of cultural resource inventories, separate from Forest project impetus, would increase the rate at which cultural resources are identified and protected. These inventories would also help correct a bias in the cultural resource data base wherein forested lands have received a disproportionate share of inventory work.

HUMAN AND COMMUNITY DEVELOPMENT

Human and community development was not identified as a major issue to be considered in the TNF Forest Plan. To address NFMA regulations and Pacific Southwest Regional concerns, it is briefly discussed.

The mission of the human resource programs on the TNF is to improve the welfare of underprivileged members of society, enhance the quality of life in the TNF's area of influence by benefiting both the human and natural resources, and expand public understanding of environmental conservation. Human resource programs include the Comprehensive Employment and Training Act, Senior Community Service Employment Program, Youth Conservation Corps, Young Adult Conservation Corps, and the Volunteer Program. During fiscal year 1980, these programs accomplished \$1.6 million worth of resource improvement related work on the TNF. The TNF hosts these programs by providing employment opportunities and supervision. Enrollees in these programs are subsidized by funds Congress has allocated for operation of each specific program. The TNF will use whatever human resource programs are authorized and funded to achieve objectives of the TNF and the programs.

The Urban and Community Development Program involves both research and technical assistance through the State for the improvement of natural resources on private lands. One such program, which the TNF was instrumental in developing and actively supports, is the Resource Conservation and Development Program for an area called the High Sierra Resource Conservation and Development Area.

The High Sierra Resource Conservation and Development Area is one of three approved by the Secretary of Agriculture within California (the others are the Cal-Neva and Central Coast Areas). The Secretary has directed the Forest Service to assist the Resource Conservation and Development Areas to the extent of available funds. The Soil Conservation Service is the agency responsible for administering activities relating to these areas.

The Counties of Sierra, Nevada, El Dorado, and Placer lie within the High Sierra Resource Conservation and Development Area. Within the Resource Conservation and Development Area there are five Soil Conservation Service Resource Conservation Districts. The governing council for the High Sierra Resource Conservation District is composed of the following members.

One President

Five Representatives, one from each Soil Conservation Service Resource Conservation District

Four Representatives, one from each county government

One Representative from the Sierra Planning Organization

The council establishes policy direction and provides necessary administrative guidance to ensure an action plan. The action plan is developed by the council to use local people interested in and familiar with specific resources. These citizens are aided by resource specialists from local, State, and Federal agencies, including the TNF. The council has established these citizen committees to evaluate resources and to respond to the council with suggested necessary improvements.

Human Health and Safety

The principal activities associated with the proposed Forest Plan are timber harvest, transportation, manufacturing, reforestation, timber stand improvement, recreation, mining, and grazing.

The logging and mining industries have a high incidence of accidents per work-hour. Accidents occur in spite of elaborate safety programs. Worker safety is regulated by Federal and State agencies. The Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration of the Department of Labor are responsible for program activities, including safety and health standards, enforcement, training, education, and State programs. The California OSHA State Plan for enforcement of State standards places the responsibility of enforcing standards and orders with the Division of Industrial Safety. Specific reference to timber harvest and manufacturing of forest products is found in the Logging and Sawmill Safety Orders. Safety of nonindustrial workers and National Forest visitors in a timber sale area is covered by timber sale contract provisions. Public safety is also considered in the design of TNF roads built to harvest and manage timber stands.

HYDROELECTRIC PROJECTS

Hydroelectric development is a legitimate use of public land, recognized by the Federal Power Act of 1920. That Act granted authority to license hydroelectric developments to the Federal Energy Regulatory Commission. This Commission is responsible for completing environmental analyses for proposed projects, but the Forest Service, as the land management agency, participates in the evaluation as a cooperating agency. The Forest Service objective for hydroelectric projects is to ensure that construction and operation on National Forest System lands are consistent with the purposes for which the National Forests were established, while considering the energy generating potential of the project.

The TNF comprises a large portion of several major watersheds which feed hydroelectric production facilities operated by Pacific Gas and Electric Company, Sierra Pacific Power Company, and a number of local water agencies. Approximately 60 percent of the hydroelectric power in the Pacific Gas and Electric system is derived from National Forest System watersheds. In excess of 60 billion kilowatt hours of electrical production can be attributed to the TNF's watersheds. About three dozen applications were received in the early 1980's for small hydroelectric projects, with as many as three applicants for the same site. About ten proposals are currently being analyzed. Some existing dams and other facilities are being examined to see if it would be cost effective to increase their power production capabilities. The potential generating capacity from existing hydroelectric facilities within and adjacent to the TNF is 29,000 kilowatts per year.

In the early 1900's, the US Geological Survey inventoried, classified, and withdrew from mineral entry hundreds of potential power production sites throughout the TNF. This inventory was concerned only with physical dam site possibilities and did not deal with other important considerations such as water rights, economics, and distance to markets.

LANDS

Approximately 1,175,535 acres of land lie within the TNF boundary, of which 32 percent (381,161 acres) is land of other ownership. The intermingled landownership pattern found within the TNF boundary is a result of various public land and mining laws. A large portion of the Forest has a checkerboard ownership pattern which was a result of railroad and school grants.

This checkerboard ownership pattern is an important consideration when planning for the use and development (or nondevelopment) of TNF land. Intermingled landownerships can increase the costs for such things as boundary surveys and rights-of-way acquisition. It also can create more challenges for timber harvest and fire management programs. On the other hand, it contributes access to fish and wildlife which might not otherwise be available and encourage a positive land-use ethic.

Right-of-way Acquisition

The TNF acquires about 15 rights-of-way per year. Rights-of-way have been obtained for most of the arterial and collector roads. Occasionally, widening or realignment of these roads requires additional rights-of-way. The current program is focused on providing access via local roads to isolated blocks of National Forest System lands. The rights-of-way for the Pacific Crest National Scenic Trail have been obtained and work has begun for those needed for the Western States Trail. The TNF completes about three cost-share supplements to master road rights-of-way construction and use agreements with major landowners each year, mostly for local roads and reconstruction of arterials and collectors.

Property Boundary Surveys and Trespass

Because of the substantial amount of acquired land and intermingled ownerships on the TNF, considerable opportunities exist for survey problems, title claims, and trespass. Primary emphasis has been and will continue to be on prevention. There are 2,796 miles of property line on the TNF, of which 507 miles have been surveyed to date. Approximately 120 miles of boundary are being marked and posted each year. Six applications for relief under Small Tracts Act authority are being processed. Several important cases are being litigated in Federal Court. More encroachments will be discovered as the survey program continues, but the marking and posting phase of the program should help reduce incidents in the future.

Adjustments

The goal of the land adjustment program is to achieve more efficient and effective management of TNF resources by acquiring or disposing of land. Forest Service policy is to consolidate scattered parcels and to acquire identified key parcels. The land adjustment program is guided by the Master Forest Land Ownership Adjustment Plan (planning records 1922.16a.7c) for the TNF and specific purchase composites in certain critical recreation areas. Subsequent composite and adjustment program updates will be based on the direction established in the Forest Plan. To implement land adjustments, the Forest Service uses exchange, purchase, or donation; exchange is the most common.

The trend to lot split and develop subdivisions on the intermingled private lands, which was prevalent during the last two decades, has come to an end. Fewer lot splits are approved because of much stronger county zoning and land use controls and a less vigorous economy.

TNF landownership adjustments are coordinated with the plans and programs of other Federal agencies and State and local governments. The President's August 2, 1979, Environmental Program directed the Forest Service and the Bureau of Land Management to study possible boundary adjustments between the two agencies. A current National study will determine what adjustments should take place. Such action would require an Act of Congress, following full public involvement. If major transfers should take place, the Forest Plan will be amended or revised accordingly.

Special Uses

The TNF land is generally available to occupancy if it is in the public interest, except where special uses are specifically prohibited through legislation, local zoning, or administrative decision. Occupancy is

authorized by special-use permits. The TNF's proximity to population centers is increasing the demand for such use of public land to satisfy individual and public needs. Approximately 870 permits, easements, and licenses authorize the use of National Forest System land for uses ranging from cabins, resorts, and ski areas to reservoirs, roads, and utilities, encumbering over 22,000 acres. There is an effort to group compatible uses by designating transportation and utility corridors, such as Interstate 80, and electronic sites. An average of 70 permits, licenses, and easements are issued for authorized uses, while an average of 90 requests for use of National Forest System land are received each year. The TNF discourages special uses which would lower the value of parcels that are identified for exchange.

Withdrawal

All withdrawals of public lands from mineral entry are subject to the requirements of the Federal Land and Policy Management Act (FLPMA) of 1976. The Bureau of Land Management determines policy and procedures for withdrawals of public lands. That policy states that Withdrawals are to be allowed only where there is a definite showing of need and where analysis has shown that no alternative approach would meet this need. Among the factors to be considered are the uniqueness of resource values and the ability of the site to tolerate surface disturbances. The Forest Service requires that, where feasible, all mining operations be conducted to minimize adverse impacts on surface resources (36CFR 228.8).

In compliance with Section 204 of FLPMA (Public Law 94-579), each withdrawal will be reviewed by the Secretary of the Interior to determine whether the withdrawal should continue and for how long. This review is to be completed by October 21, 1991. The Forest has recommended about 2,000 acres of withdrawal be terminated and opened to mineral entry.

Withdrawals protect administration, recreation, and natural history sites, experimental areas, and scenic values from impacts which might be caused by mineral entry and development. For more information concerning existing withdrawals, see the TNF Status Records. Approximately 68,100 acres of the TNF are withdrawn from mineral development to provide this protection. Most of this acreage is within the North Fork American Wild River and the Granite Chief Wilderness. About one-tenth of the acreage in withdrawals is considered to have a high mineral potential.

Withdrawals by other agencies for active power and reclamation projects prohibit mineral entry on land immediately surrounding various reservoirs and hydroelectric facilities. These withdrawals do not affect areas of high mineral potential.

Transportation and Utility Corridors

One major existing transportation and utility location on the TNF will be designated as a corridor under all action alternatives and in the Forest Plan.

The Donner Pass corridor includes the following facilities:

- o Four-lane transcontinental (Interstate 80) highway.
- o Southern Pacific transcontinental railroad.
- o Transcontinental and local telephone lines.
- o Southern Pacific high-pressure petroleum pipeline.
- o Variety of parallel electrical transmission lines.

This corridor is up to one mile wide, contains considerable private land, and can support additional uses. An opportunity exists to expand and upgrade existing facilities to meet future demands. (Also see the discussion under VISUAL RESOURCES - Distance Zones, in this chapter.)

Other existing and proposed facilities on the TNF do not require corridor designation as they conform with management direction for the area.

Current direction excludes corridors from the Granite Chief Wilderness, the North Fork American Wild River, Onion Creek Experimental Forest, and potential Research Natural and Special Interest Areas

LAW ENFORCEMENT

The TNF administers its responsibilities of regulating and protecting National Forest System lands under Title 36 of the Code of Federal Regulations, Part 261, and appropriate sections of Title 18 of the United States Code

The U.S. Constitution reserves to the States the general police power, the authority and responsibility to protect citizens and their property. Except in specific areas, the States have delegated their general police powers to city police departments or local county sheriffs (which is the case in the TNF area), and the Forest Service does not assume the sheriffs' responsibilities in such matters. Consequently, State, local, Forest Service, and other Federal law enforcement authorities exist simultaneously on National Forest System lands.

The time-tested, successful philosophy that all Forest Service employees have law enforcement responsibilities will continue and will be strengthened. Although only a very small percentage of visitors and users on the TNF commit a violation requiring law enforcement action, the number of incidents requiring law enforcement action is increasing steadily because of an increase in the following:

- o Visitors and users.
- o Conflicts between users.
- o Enclaves of lawlessness on National Forest System and adjacent lands.
- o Users involved in illegal activities.
- o The trend toward increased criminal activity by many segments of society.

The increase in volume and seriousness of law violations and the complexity and diversity of law enforcement situations occurring on the Forest today require professional law enforcement support. This support requires additional employees trained and equipped to function in a full law enforcement capacity.

The TNF currently has cooperative law enforcement agreements with Nevada, Placer, Sierra, and Yuba Counties. The services provided by the Sheriff protect recreation users and their property. These services are reimbursable under the Jurisdiction Act of August 10, 1971 (P.L. 92-82), from National Forest appropriations. The Forest has good working relationships with all four county law enforcement agencies.

TNF personnel also cooperate routinely with other State and Federal agencies such as the California Department of Fish and Game, California Highway Patrol, Federal Bureau of Investigation, U.S. Marshall's Office, and various drug enforcement agencies.

Local law enforcement agencies are small and have suffered budget reductions in the past four years. For example, Sierra County has only eight deputy sheriffs and is unable to handle all situations that occur within its area of responsibility on the Forest. Incidents and crimes normally associated with urban areas, such as robberies, assaults, burglaries, narcotics trafficking and cannabis cultivation, are increasing on the Forest. Increased criminal activity leads to delayed responses by responsible agencies, which in turn can expose Forest officers and visitors to potential personal risk.

MINERALS

Interest in mineral and energy mineral sources and production has increased significantly over the last decade. The identification, exploration, and development of potential mineral and energy mineral sources are important. Potential energy sources on the Forest include geothermal, wood byproducts, and

hydroelectric. Land uses that restrict or prohibit mineral prospecting and mining are also of concern, and the potential environmental impacts of mining make minerals an important public issue. (Mineral withdrawals are discussed in the LANDS section of this chapter.)

Four categories of minerals are located in the TNF

- o Locatables (hardrock minerals - gold, silver, etc.)
- o Leasables (geothermal and locatable minerals on acquired land)
- o Saleables (basically common varieties - sand, gravel, etc.)
- o Outstanding Mineral Rights (land managed by the TNF where the mineral estate is reserved or outstanding; there are 460 acres on the TNF and development is unlikely)

The TNF has analyzed mineralization, based on available nonproprietary information and professional expertise (Mineral Potential Map, planning records, 1920.16a.7d). This analysis includes an estimate of potential conflicts between minerals and other resources (refer to Chapter 4). Maps of the reserved mineral rights are too voluminous to be included in the EIS (planning records, 1920.16a.7d).

The majority of the TNF is open to mineral entry under the 1872 Mining Law for locatables. Principal leasables on the TNF are geothermal, generally found on the east side of the Sierra, and metallic minerals, found on those acquired lands without public domain status. The saleables, or common variety form of minerals, are the only minerals 'managed' by the Forest Service.

The western side of the TNF is highly mineralized. This area includes the historic Northern Mines gold mining region (Downieville to Placerville). Other important minerals and common variety minerals found in the TNF include chromite, barite, silver, iron, copper, sand, and gravel. Chromite is considered to be a strategic mineral of critical significance because current supplies are obtained primarily from foreign sources. No deposits of fissionable materials are known on the TNF.

Over 10,000 mining claims have been filed on the TNF, along with about 200 notices of intent to operate and 150 plans of operations. Very little mineral production information is available, particularly for gold. Use of National Forest System land for purposes other than mineral resource development and extraction, under the assertion of rights provided by the 1872 Mining Law, is a continuing problem.

Gold production has declined since World War II. The last large mine in the Northern Mines shut down in 1956. The mines at Alleghany, the last active quartz mining district, shut down in 1965. The increase in the price of gold during the past few years has created a second gold rush of both mining for recreation and speculation in gold mining properties.

The need to provide plans of operations for mining activities has increased by about 100 per year until 1986 and then leveled off. Management of minerals, except saleables, on the TNF is mainly in response to demand. All land open to mineral entry has the potential to be explored and developed. Market conditions are the driving force for exploration and development.

The National demand for minerals is increasing; as a result, greater emphasis will be placed on exploring for and developing minerals on public land. New exploration, production, and development technologies, the depletion of current reserves, and a National desire to reduce dependence on foreign supplies are other factors that can stimulate mineral exploration and development on National Forest System land. The demand for aggregate is local, and it is expected that transportation costs and depletion of existing sources will accelerate the future demand for this resource.

Access for mineral exploration and development is generally unrestricted subject to the mitigation of impacts on surface resources. Exceptions are the Granite Chief Wilderness, special area allocation (i.e., the North Fork American Wild River, research natural areas, etc.), and other appropriated land.

Access to wilderness, special areas, and other appropriated land is subject to valid existing rights. It is restricted to the extent that the integrity of the area involved must be maintained. The specific restrictions for the areas of concern are contained in the prescriptions

As the scale of mining activities increases from prospecting and exploration to development, considerably more time and effort will be required to administer the operations because of greater potential for serious impacts. Suction dredging activities have increased in the major river drainages on the west side of the TNF during the past few years.

A potential geothermal energy source has been identified on the east side of the TNF; its potential appears to be minor. The TNF has no geothermal leases or lease applications. Applications for development of energy minerals (including oil, gas, and geothermal) are handled on a project basis

The prospecting, locating, and development of mineral resources within National Forests is authorized by the Organic Act of June 4, **1897**. The Act also allows the Secretary of Agriculture to establish rules and regulations in connection with operations authorized by mining law. These regulations, which minimize impacts on the resources or define procedures, can be found in **36 CFR 228** (locatable minerals and disposal of saleable mineral materials) and **293.14** (mineral leases and permits in wilderness).

Generally, the authority to manage locatable and leasable mineral resources is retained by the Secretary of the Interior. Agreements, embodied in memorandums of understanding between the Secretaries of Agriculture and the Interior which share various work processes, are found in **FSM 1500**, External Relations. The authority for the management and disposal of mineral materials (including but not limited to common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay) is with the Forest Service.

The detailed authorities and direction for locatable minerals, mineral leasing, and mineral sales are in **FSM 2800**, Minerals and Geology.

RANGE

The ranges on the TNF are used by domestic livestock and wildlife. Range management is important because of the large number of domestic livestock, primarily cattle and sheep, that graze these ranges. Important issues are to maintain forage condition in satisfactory ecological condition or improve those ranges in less than satisfactory ecological condition; the amount of land available for grazing domestic livestock, the amount of forage produced; the number of permitted animals; and the competition between livestock and wildlife for available forage.

Current Situation

The available domestic livestock forage that exists on the TNF is in transitory and permanent range. Transitory range is created by wildland fires and by management practices, especially timber harvesting. Transitory range occurs primarily on the lower elevation western slopes. Permanent range consists of high mountain meadows throughout the Sierra Crest and the eastside pine forest type.

As displayed in Table 3.14, 46 active grazing allotments within the TNF encompass 310,448 acres of National Forest System land and 192,194 acres of waived and cooperative private land. Cattle graze on 30 allotments and sheep graze on 15 allotments, with 1 allotment grazed by both cattle and sheep. These allotments produce a total of 20,000 animal unit months (AUMs) on National Forest System land and 10,800 AUMs on private land. Currently, two allotments have no livestock.

Three management strategies employed on the TNF, as defined in the Nation's Range Resources, Forest Resource Report No. 19, December 1972, are (1) intensive management of the environment and livestock, (2) extensive management of the environment and livestock, and (3) environmental management with livestock. Table 3.15 summarizes the current range allotments and strategies. About 85 percent of the suitable range currently is in satisfactory ecological condition.

Thirty-four ranches and about 44 families depend on TNF grazing allotments. About 13 of the 44 families live in the Sierra Valley area. The rest of the ranchers who use grazing allotments are based in the Nevada City, Auburn, and Sacramento Valley areas. Five large sheep operations use the TNF.

Supply and Demand

The TNF identified all land capable, available, and suitable for range production using District Range Atlases, allotment management plans, and analysis data contained in the allotment files. These land classifications were transferred to 1:24,000 scale base maps in the form of range types (permanent and transitory), allotment boundaries and names, and average condition and trend for each range type. The range maps are found in the planning records.

TNF land was identified by three major categories to determine land capable of range production: (1) land capable of producing permanent range, (2) land capable of producing transitory range, and (3) land that is not capable of producing forage.

The North Fork American Wild River's designation precludes grazing by domestic livestock. The remaining National Forest System land considered capable of range production is available.

TABLE 3.14 - CURRENT ALLOTMENT CAPACITY, RANGE TYPE, AND KIND AND NUMBERS OF LIVESTOCK

Allotment	Class	Permitted NFS No	Permitted NFS AUM's	Permitted PVT No	Permitted PVT AUMs	Management Strategy	Transitory or Permanent Range
American Hill	Cattle	64	281	26	107	Extensive	T B P
Bear Valley	Cattle	100	537			Intensive	P
Beckwourth	Sheep	820	1108	867	1198	Intensive	P
Beckwourth Pk	Cattle	16	38	4	8	Some Livestock	P
Bickford	Cattle	75	408	55	298	Extensive	P
Boca	Sheep	1167	2308	1029	1868	Intensive	P
Canyon Creek	Cattle	114	418	96	348	Extensive	T & P
Chipmunk	Cattle	114	448	87	327	Extensive	T B P
Clover	Cattle	11	38			Some Livestock	P
Deadwood	Sheep	1000	268			Extensive	T
Devils Peak	Sheep	742	298	1108	538	Extensive	P
Duncan Sailor	Sheep	1000	358			Extensive	P
English	Cattle	69	278	81	328	Extensive	P
Euar Valley	Cattle	133	468	248	1278	Extensive	P
Gold Valley	Cattle	172	307	12	3	Extensive	P
Harding Pt.	Cattle	55	218			Some Livestock	P
Haskell Peak	Cattle	60	138			Extensive	P
Haypress	Cattle	69	234	67	227	Extensive	P
Hot Springs	Cattle	12	58			Some Livestock	P
Howard Creek	Sheep	500	208	250	108	Extensive	P
Independence	Cattle	80	678			Extensive	P
Kyburz	Sheep	829	878	36	24	Intensive	P
Lincoln Valley	Cattle	46	138	74	218	Extensive	P
Lower Antelope	Cattle	19	104	35	198	Extensive	P
Loyalton	Cattle	5	15			Some Livestock	P
Middle Yuba	Cattle	121	738	17	104	Extensive	T
Mosquito	Cattle	197	1057	3	16	Extensive	T
Mount Haskell 1/	Sheep	375	(37)	375	(37)	Extensive	P
Mountain House	Sheep	450	414	550	506	Extensive	T
Mount Zion	Cattle	67	407			Extensive	T
Nichols Canyon	Cattle	25	102			Extensive	P
Oregon Creek	Cattle	90	491			Extensive	T
Our House	Cattle	125	492	59	232	Extensive	T
Pass Creek	Cattle	53	206	56	209	Extensive	P
Payen	Cattle	95	384	55	223	Intensive	P
Perazzo Mdws	Cattle	164	664	104	421	Intensive	P
Rattlesnake	Sheep	791	400	1059	535	Extensive	P
Saddleback	Sheep	1000	900			Extensive	P
Sagehen	Sheep	1400	425			Extensive	P
Sierra Crest	Sheep	1058	529	942	471	Extensive	P
Smithneck	Cattle	134	742			Intensive	P
Sugar Pine	Cattle	200	942			Extensive	T
	Sheep	644	352	156	56	Extensive	T
Summit	Sheep	475	47	475	47	Extensive	P
Upper Antelope	Cattle	22	55	100	198	Extensive	P
Volcano	Sheep	1000	300			Extensive	T
Webber Lake	Sheep	150	135			Some Livestock	P
Willow Creek	Cattle	15	100	10	67	Extensive	T
4 Sp. Use Pasture	Cattle	45	218				
2 Sp. Use Pasture	Horses	3	13				
4 Crossing Permits	Sheep	3950	287				

1/ Mount Haskell Allotment is located on the Plumas National Forest but is administered by the TNF

Portions of the Sierra Crest Sheep Allotment and the Chipmunk Cattle Allotment are located within the Granite Chief Wilderness. The majority of the area is used by sheep through an extensive management system, starting at the lower elevations on July 15 and ending the season on September 30. Cattle use the northwestern portion from late August until the end of September. Management systems were developed for both allotments to permit the livestock to use the forage in harmony with the high recreation use of the area

Suitable range is capable and available land currently (or potentially) accessible to livestock that can be grazed on a sustained yield basis. Slopes greater than 50 percent are unsuited for livestock use. Table 3.16 displays the maximum acres of capable, available, and tentatively suitable range on the TNF.

MANAGEMENT STRATEGY	NO. OF ACTIVE ALLOTMENTS	NFS ACRES	PRIVATE ACRES	% OF TOTAL ALLOT.ACRES
Intensive	7	132,120	31,635	33
Extensive	33	162,574	160,509	64
Other (with livestock)	6	15,754	60	3
TOTAL	46	310,448	192,194	100

TABLE 3.16 • MAXIMUM ACRES OF CAPABLE, AVAILABLE, AND TENTATIVELY SUITABLE LAND FOR RANGE PRODUCTION ON THE TNF

Land Type	Acres*
Permanent Range-Forest Land (capable)	105,844
Transitory Range-Forest Land (potentially capable)	647,264
Noncapable Forest Land	41,266
Land determined as not available	6,074
Land unsuitable due to other uses or >50% slope	189,621
Land determined as capable, available, and tentatively suitable	577,131

* Acreages do not include private land within the TNF boundary.

Demand to use all capable, available, and suitable range resources on the TNF will keep increasing. This increase is primarily because of the loss of private grazing land to other uses, such as crops and urbanization. Permittees will need to use the TNF range resource to sustain their breeding stock of cattle and sheep. Some demand, such as from the Sierra Valley, may not only be to produce meat, but to sustain family ranches. A limited potential exists to increase forage capacity by implementing intensive grazing systems on existing allotments, fully using transitory range opportunities in harmony with other resource needs and objectives, and returning vacant allotments back to AUM production during the first decade. Under current management direction this increase would only partially meet demand.

Research studies are also needed to evaluate the site potential of the eastside pine forest type for dual use (timber and forage).

MRVD Use* Per Year	1990	2000	2010	2020	2030
Developed	1,976	2,393	2,784	3,129	3,318
Downhill Ski	292	379	492	639	830
Dispersed	2,925	3,436	3,944	4,452	4,960
TOTAL	5,193	6,208	7,220	8,220	9,108

* MRVD Use - Thousands of Recreation Visitor Days

Note: Projections are based on 1982 figures.

Developed Recreation

Presently, 197 developed recreation sites are on 1,843 acres. They have a combined capacity of 30,104 persons-at-one-time (PAOT). These sites accounted for 1,885,800 RVDs in 1982 (Table 3.18).

TABLE 3.1a DEVELOPED RECREATION SUMMARY

Type of Facility	Number of Sites	Developed Acres	Capacity PAOT *	Recreation Visitor Days 1982
Vistas	5	13	425	9,500
Park-Sports Site	1	4	120	2,500
Boating Sites	9	30	2,040	30,500
Swimming Sites	4	10	825	9,200
Family Camping	67	720	8,195	826,400
Group Camping	9	66	835	68,800
Family Picnicking	19	112	1,175	98,900
Lodge-Resort-Private	4	21	250	43,900
Organization-Private	17	131	2,180	174,200
Other Concessionaires	2	9	80	4,700
Rec Res-Private	42	151	1,115	90,800
Ski Areas **	4	545	12,200	497,600
Interpretive Services	14	31	664	29,000
TOTALS	197	1,843	30,104	1,885,800

Developed Campgrounds. Most developed campgrounds are filled to capacity on weekends, with vacancies during weekdays. At higher elevations, seasonal use is June through September, with a few sites at lower elevations being used throughout the year. The TNF's average use of developed campgrounds is about 24 percent of its theoretical capacity. Experience throughout the Pacific Southwest Region indicates that optimum campground use is about 35 to 40 percent of theoretical capacity. This indicates that the overall existing campground capacity should be adequate for the next 5 to 10 years. Many of the more popular campgrounds often exceed the optimum level while the less popular sites may be used at only 12 to 15 percent of theoretical capacity. This means that the demand for certain sites and locations may exceed capacity and the Forest may have to provide additional capacity in the next 5 to 10 years. Other types of developed facilities in the public sector appear adequate to meet the anticipated 1990 demands.

A number of potential recreation sites have been inventoried within each Recreation Opportunity Spectrum (ROS) class. These sites were originally inventoried for the Outdoor Recreation Resources Review Commission (ORRRC) studies based on the criteria of water availability, existing vegetation, and gentle slopes. Existing access was not emphasized because that factor could change over time. Desired characteristics for dispersed use vary so widely that no inventory could display the desired areas for all dispersed recreation use opportunities. The ROS classes inventory addresses the broader desired recreation experiences for both developed and dispersed recreation. The identified potential developed recreation sites should be adequate to meet the developed recreation demand for the next several decades. By the year 2030, however, developed recreation site capacity would probably need to be increased by 52 percent to accommodate dispersed recreationists. If recreation use patterns shift because of high fuel costs and scarcity, those sites nearest metropolitan areas would receive increased use.

Recreationists on National Forest System lands sometimes trespass onto adjacent private land, often resulting in conflicts between recreationists and private landowners.

Facilities Under Special-Use Permit. The TNF has a variety of recreation facilities under special-use permit. These include 155 recreation residences in 9 tracts, 5 summer resorts and commercial establishments, 17 organizations and clubs, and 4 winter sports resorts. These facilities receive active use and provide an important service. Future use determinations have been made on all recreation residences. These decisions are incorporated in the Forest Plan.

Dispersed Recreation

Dispersed recreation is forest and rangeland outdoor recreational use that occurs outside of developed areas. Examples of dispersed recreation on the TNF include cross-country skiing, off-highway vehicle use, horseback riding, hiking, and fishing.

Winter Sports

Cross-country Skiing. Cross-country (Nordic) skiing is currently the fastest growing dispersed recreation activity on the TNF. This activity was about 36,100 RVDs in 1982, and practically nonexistent in 1970. Cross-country skiing, along with snowmobiling and other recreational winter sports, including snowplay, creates an increased need for support facilities, e.g., snow removal, adequate parking, sanitation, trails, and provisions for search and rescue. A primary cause of conflict between cross-country skiing and snowmobiling is their use of the same trail system.

The opportunity to provide parking, marked trails, and other support facilities is available from the private sector, either through the use of National Forest System land under special-use permit or through the use of private land.

Downhill Skiing. Four existing winter sports resorts are operated under special-use permits. They provide about 209,500 RVDs per year on National Forest System land and about 288,100 RVDs on private land, for a total of about 497,600 RVDs per year. Five other winter sports resorts are located entirely on private land within the TNF boundary and several others are on private land adjacent to the TNF boundary. Existing downhill ski resorts are approaching full use of their existing facilities. By 1990, a developed capacity of 19,320 PAOT increase over the 1982 existing capacity is expected through expansion of existing facilities onto 1,270 acres of National Forest System land. Four potential winter sports areas have been identified

either wholly or partially on TNF land Existing facilities are overcrowded on peak weekends and holidays, which diminishes the recreation experience. This overcrowded situation also adds pressure to an already overcrowded transportation system and overextended local public services. The periodically proposed 'Ski Circus' concept would interconnect several existing and proposed ski areas along the Sierra Crest. The proposal is still being discussed. No commitments have been made. Expansion of existing facilities and construction of new facilities depends upon the availability of local support facilities, transportation, and market considerations.

Off-Highway Vehicle Use

Recreational off-highway vehicle (OHV) use was about **177,500** RVDs in **1982**. Off-highway vehicle use is administered through the direction in the **TNF Off-Road Vehicle Travel Plan** and **Transportation Management Plan**.

At the same time, demand for nonmotorized access into undeveloped areas is increasing. Hikers and horseback riders seeking this experience are often in conflict with OHV use, especially with mountain bikes and motorized trail bikes on narrow trails. Presently, Grouse Lakes, Granite Chief Wilderness, and Castle Peak motor vehicle closure areas provide recreational opportunities for hikers and equestrians without this conflict.

Snowmobile use is permitted in most of the TNF. Critical winter deer ranges and key cross-country ski areas are exceptions. An assessment correlating land capacity, user needs, and user/landowner conflicts will be made on a Forestwide basis for all dispersed recreation travelways. Particular attention will be paid to opportunities for the disabled.

A draft Statewide Off-Highway Motor Vehicle Recreational Trails Plan has been developed for the State of California Department of Parks and Recreation. This plan presents the concept of a Statewide OHV trail system that connects use areas to provide opportunities for long-distance trail touring. Although the State plan identifies specific route locations, it recognizes that actual route locations may vary. Existing Forest OHV trails and low standard roads can serve as part of the Statewide system and provide long-distance touring opportunities. New connector trails may be needed to supplement existing routes and to complete the system.

Recreation Opportunity Spectrum Class Allocations

Recreation Opportunity Spectrum (ROS) is a system that stratifies the TNF into recreational opportunity categories based on the size, distance from roads, and degree of development of any given recreational area. ROS is used to allocate a variety of existing and potential recreation activities and opportunities to National Forest System land. The ROS classes are urban (U), rural (R), roaded natural (RN), semi-primitive motorized (SPM), semi-primitive nonmotorized (SPNM), and primitive (P) (see Chapter VIII of the Plan - Glossary). Current recreation use, in recreation visitor days (RVDs), and recreation capacity, in persons-at-one-time (PAOT), on the TNF are shown in Tables **3.19** and **3.20** for each ROS class. The classes are separated into two categories: developed recreation and dispersed recreation. In dispersed recreation the eleven roadless areas discussed under the **WILDERNESS AND ROADLESS AREAS** section contribute the majority of the acres available for SPNM and SPM recreation opportunities.

TABLE 3.19 PERSONS-AT-ONE-TIME (PAOT) BY RECREATION OPPORTUNITY SPECTRUM (ROS) CLASS"

ROS Class	Public Sites	Private Sites	PAOT Dev.Sites	PAOT Dispersed	RVDs Dev.	RVDs Dispersed
Rural	90	51	26,819	167,686	1,649,900	622,674
Roaded Natural	36	17	3,265	389,053	235,200	1,337,596
Semi-Primitive Motorized	1	0	10	1,226	100	184,496
Semi-Primitive Nonmotorized	0	2	10	1,000	600	161,434
Primitive	0	0	0	0	0	0
TOTAL	127	70	30,104	558,965	1,885,800	2,306,200

ROS 1/ Class	1982 RIM 2/ Acres	Capacity PAOT 3/	Use-1982 MRVDs4/
Rural	1,370	26,819	1,649.9
Roaded Natural	469	3,265	235.2
Semi-Primitive Motorized	2	10	.1
Semi-Primitive Nonmotorized	2	10	.6
Primitive 5/	0	0	0
TOTAL	1,843	30,104	1,885.8

ROS 1/ Class	1982 RIM 2/ Acres	Capacity PAOT 3/	Capacity MRVDs4/	Use-1982 MRVDs4/
Rural	63,936	167,686	19,400.0	622.6
Roaded Natural	540,983	389,053	47,000.0	1,337.5
Semi-Primitive Motorized	122,630	1,226	382.5	184.4
Semi-Primitive Nonmotorized	99,949	1,000	474.5	161.4
Primitive*	0	0	0	0
TOTAL	827,499	558,965	67,257.0	2,306.2

1/ ROS - Recreation Opportunity Spectrum

2/ RIM - Recreation Information Management

3/ PAOT - Persons-at-one-Time

4/ MRVD - Thousand Recreation Visitor Days

5/ Primitive ROS class: Zero acres exist on the TNF but the Granite Chief Wilderness is managed for Primitive ROS class direction to be consistent with Wilderness values.

RESEARCH NATURAL AREAS

Research Natural Area (RNA) candidates are recommended to the Chief of the Forest Service to preserve examples of all significant natural ecosystems for purposes of research and ecological study, and to provide gene pools. The Pacific Southwest (PSW) Regional Guide displays the target Research Natural Area system for the California Region. Presently no established RNA's are on the TNF.

Proposed RNA's include Babbm Peak, representing Washoe pine (*Pinus washoensis*). Other areas which have been identified as candidates to meet the PSW Regional target Research Natural Area system are Basin Peak because of its mountain hemlock (*Tsuga mertensiana*), Sugar Pine Point with its muted conifer, the Mt. Lola mountain hemlock area near Independence Lake, and a mountain hemlock area located near Needle Lake and Lyon Peak.

A detailed evaluation of all the RNA's is contained in Appendix C. This evaluation presents for each area: (1) a description of the physical setting, (2) an analysis of the environmental consequences of designating the area to specific uses, and (3) findings as to the suitability, availability, manageability, and boundaries as an RNA. A map of RNA locations is found in the 'Maps' packet. Additional maps, documents, working papers, and other information relating to the RNA planning process are available for public review at the Forest Supervisor's Office, TNF, Nevada City, California.

Following is a brief description of each potential RNA.

Babbitt Peak Research Natural Area. This area, located on the Sierraville Ranger District near the Tahoe/Toiyabe National Forest boundary, is characterized by an unusual vegetative community which includes Washoe pine and mature stands of mountain mahogany.

Sugar Pine Point Research Natural Area. This area, located on the Nevada City Ranger District, is representative of mid-elevation mixed conifer forest with a large old-growth sugar pine component.

Basin Peak Research Natural Area. Located northeast of Basin Peak on the Truckee Ranger District, this area is characterized by distinctive vegetation including mountain hemlock and western white pine. This area is located adjacent to private land.

Mt. Lola Research Natural Area. This area, located northwest of Independence Lake in the headwaters of Cold Stream on the Sierraville Ranger District, is characterized by a nearly pure stand of mountain hemlock 200-300 acres in size. Stands of this size rarely are larger than 40-50 acres in the TNF. The stand is immediately adjacent to and includes private land.

Lyon Peak/Needle Lake Research Natural Area. This area, located immediately north of the northern boundary of Granite Chief Wilderness on the Truckee Ranger District, is representative of mountain hemlock stands. This area contains a number of unique plant communities.

RIPARIAN AREAS

Riparian areas consist of the aquatic ecosystem, the riparian ecosystem, floodplains, wetlands, and the first 100 feet of streamside management zones (SMZ's) on either side of perennial streams. Because there is an overlap of riparian areas and SMZ's, and because the purpose of SMZ's is ultimately to protect riparian area values, they are discussed together in this section.

Existing Condition

The aquatic ecosystem consists of about 1,500 miles of perennial streams, totaling nearly 4,000 acres of surface water, and about 20,000 surface acres of lakes and reservoirs within the Forest boundary. About 70 percent of the streams (1,050 miles or 2,800 acres) and about 10,300 of the lake surface acres are under National Forest System management.

The riparian ecosystem/wetlands areas total about **54,200** acres within the Forest boundary. Approximately **32,000** acres of these are National Forest System lands. These vary in size from less than one acre to hundreds of acres of open, wet meadows. They occur mostly on the east side of the Sierra Crest, and above 5,000 feet elevation on the west side.

Floodplains associated with large rivers (Class I streams as defined in FSH **2509.22** Chapter 30) total about **4,600** acres, most of which are on National Forest System land. These floodplains are adjacent to the main stems of the North, Middle, and South Yuba Rivers, the North and Middle Forks of the American River, and the Truckee and **Little** Truckee Rivers.

Streamside management zones comprise about **47,800** acres adjacent to perennial streams on National Forest System lands. About **38,700** acres of these are part of the TNF's capable forest land, representing 60 percent of the productive forest land base. **Eighty-six** percent of these SMZ acres constitute the riparian areas as defined in Regional direction; these constitute the first 100 feet horizontal distance on both sides of perennial streams. The remaining acreage represents the SMZ area outside the riparian area. Because drainage density is greater west of the Sierra Crest, the SMZ protection acreage is also greater here. The amount of SMZ acreage needed adjacent to intermittent and ephemeral streams is undetermined. SMZ widths are routinely identified during project-level planning in response to specific proposals.

Figure 3.2 displays the relationship between riparian areas and SMZ's (perennial streams). Figure 3.3 displays the relationship of riparian ecosystems and SMZ's for Class I and II intermittents.

When accounting for acreage overlap, there are about **85,000** acres of riparian area on the TNF. This represents 11 percent of the Forest area.

The condition of riparian areas on the TNF is generally very good. Water quality is generally high, indicating that the aquatic ecosystem is in good condition. The exceptions are some sedimentation problems relating to abandoned hydraulic diggings, some roads, recent fires, and logging on sensitive sites (refer to the WATER section for a more detailed discussion of this subject). Floodplains, the riparian ecosystem, and wetlands are generally in good condition with some exceptions, such as Carman Creek and isolated problems of streambank compaction and erosion caused by grazing.

Because of only recent emphasis on regeneration harvesting with attendant intensive site preparation activities, such as broadcast burning, there has been to date relatively **little** cumulative impacts on SMZ's. First indications are that it will be possible to protect SMZ's adjacent to perennial streams and adjacent to intermittent and ephemeral streams on flatter (tractor-loggable) ground, assuming the diligent implementation of BMP's including SMZ protective measures. There have been several recent problems where **SMZ's** and/or water quality were adversely impacted because of lack of proper implementation of SMZ protective measures; examples of this include Rock Creek, Blackwolf Creek, Deer Creek (Pride Sale), and Holden Spring Creek. A higher risk exists in protecting SMZ's adjacent to intermittent and ephemeral streams on steeper (cable-loggable) ground, mainly due to post-harvest activities, notably broadcast burning. Monitoring should emphasize these areas to determine the extent of this risk; as necessary, activities on these slopes would then be adjusted to reflect the soil and water resource needs.

Riparian Area-Dependent Resources and Use by Other Resources

Many important resources, including about 20 species of fish, many wildlife, and certain vegetation communities, are totally dependent on riparian areas for their existence. Approximately 70 percent of the **387** vertebrate species occurring on the TNF either live exclusively in riparian areas or are frequently found there.

FIGURE 3: 2 RELATIONSHIP OF RIPARIAN AREAS AND SMZS
Perennial Streams

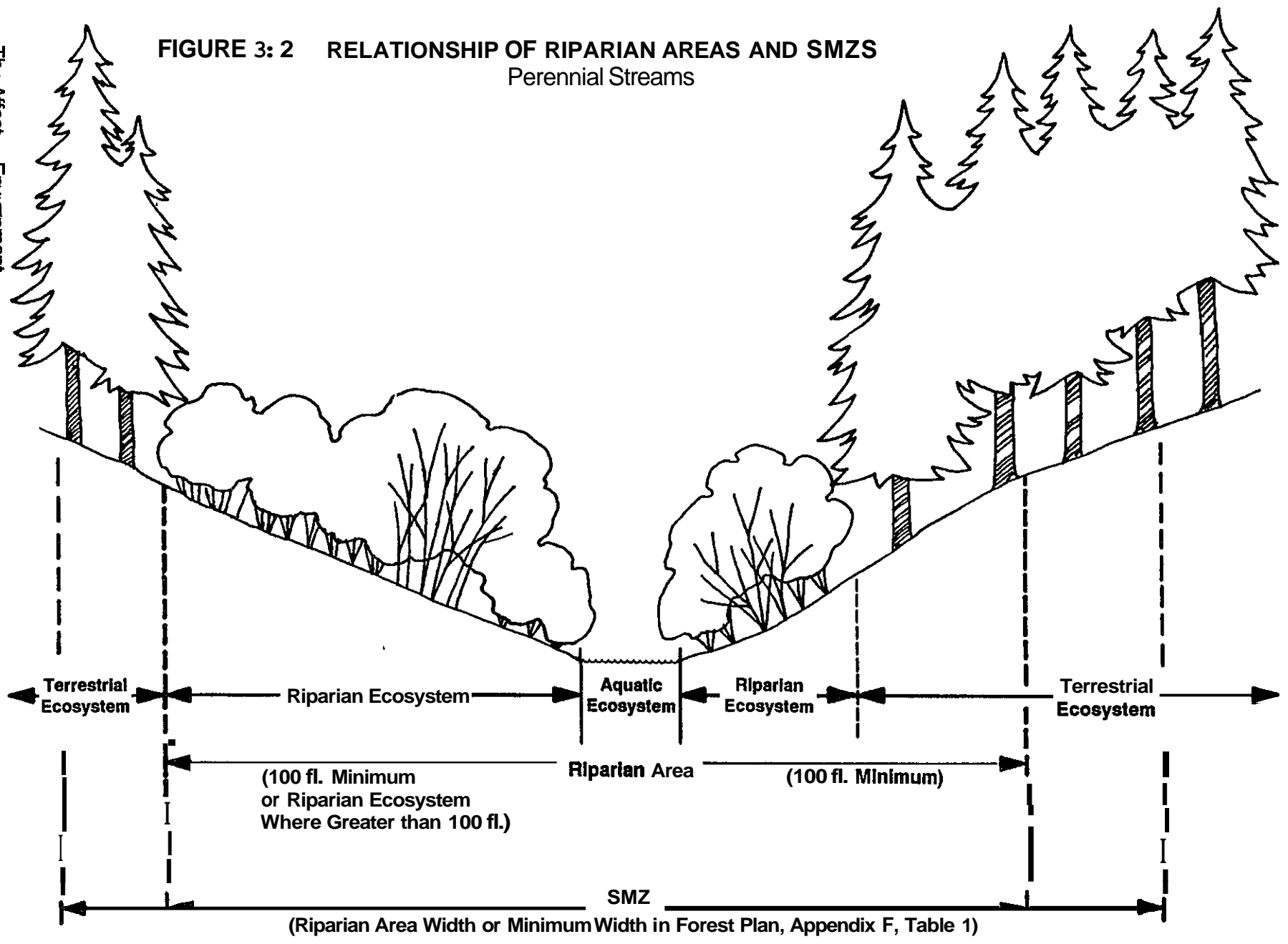
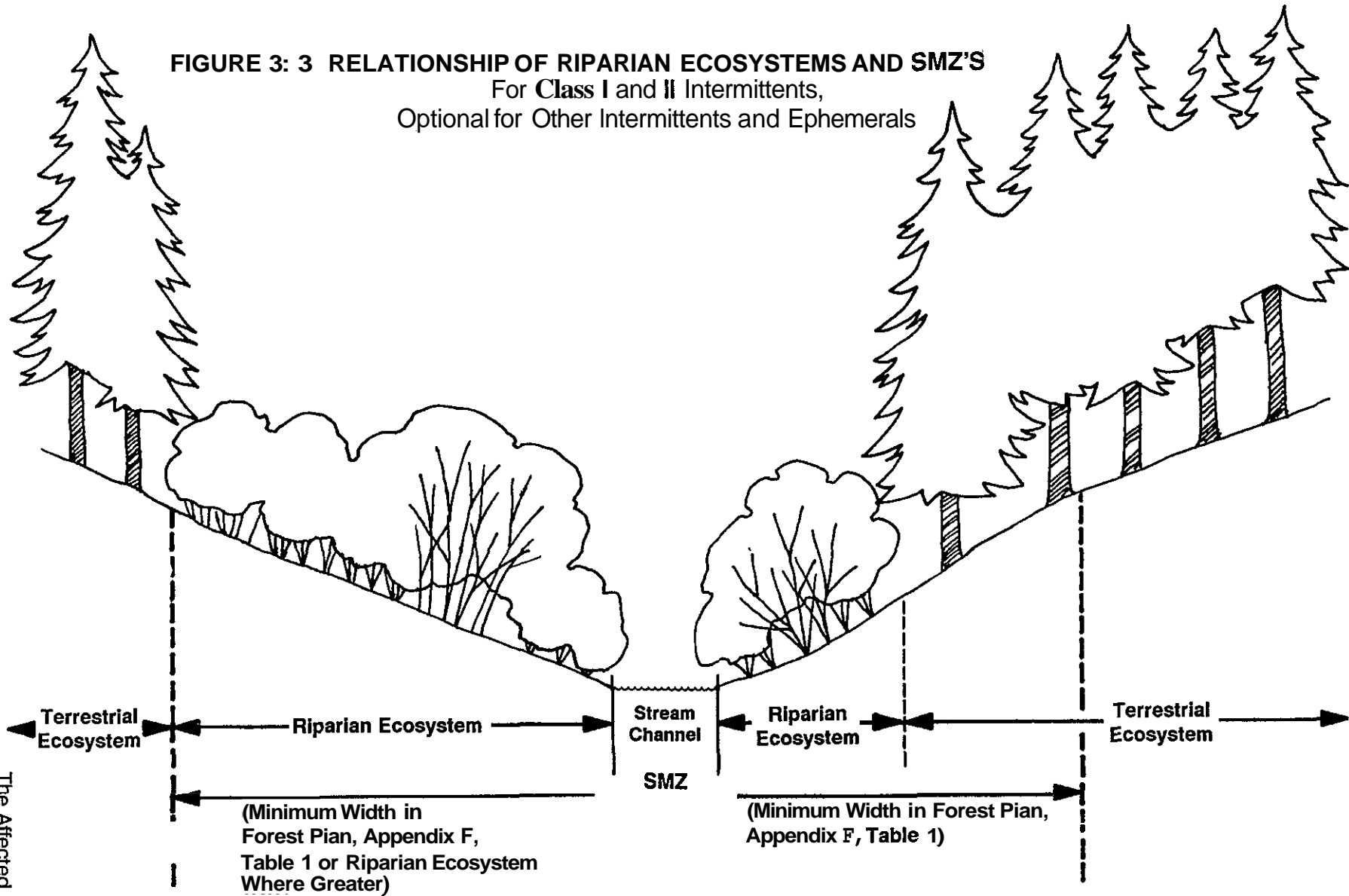


FIGURE 3: 3 RELATIONSHIP OF RIPARIAN ECOSYSTEMS AND SMZ'S
 For Class I and II Intermittents,
 Optional for Other Intermittents and Ephemerals



Other important resources and values associated with riparian areas on the Forest include groundwater recharge, moderation of peak floods, forage production, cultural resources, timber, and recreational enjoyment. Timber production in SMZ's is planned at a very low yield in deference to riparian area-dependent resource dictations. An undetermined amount of the Forest's 20,000 AUM range capacity is in the riparian zone. Recreation within riparian areas includes 238,000 RVDs of fishermen's use per year, 90,000 RVDs of swimming use, 84,000 RVDs of use involving various watercraft from rafts to powerboats, and nearly 2,000 RVDs of waterfowl hunting

Conflicts **Associated** with Riparian Areas

Current management policy allows timber harvest in SMZ's adjacent to perennial streams only where hydrologic, fishery, wildlife, and recreational values dictate. Protecting riparian vegetation adjacent to intermittent and ephemeral streams in clearcuts is difficult, particularly when treating slash on cable-logged areas.

Livestock grazing is permitted on 40 percent of the Forest. Most of this is at higher elevations and on the east side of the Forest where riparian ecosystem/wetlands acreage predominates. Riparian areas provide primary range and receive more grazing use than drier hillside or upland areas. The riparian ecosystem and wetland acreage amount to 4 percent of the Forest land base, but account for a greater but undetermined percentage of the Forest grazing use.

Other isolated concerns involve OHV use in riparian areas, and ski area development.

Current Direction and Management

Riparian areas are protected through direction contained in various Forest Service manuals, handbooks, and timber sale contracts as summarized in Best Management Practices (**BMP's**), documented in the PSW Region's publication. Water Quality Management for National Forest System Lands in California: See Plan Appendix E. General policy is to avoid or minimize any activities that could result in adverse impacts on water quality and riparian areas. Where riparian area impacts are unavoidable, such as where roads cross stream courses, mitigation measures are adopted that minimize the impacts to acceptable levels.

Designating SMZ's is an example of BMP application (BMP 1.8). This BMP is implemented to retain the tree canopy for stream shade, protect riparian vegetation along channels, maintain a sediment filter zone, protect channels and streambanks, maintain recreation values, and provide cover for certain riparian-dependent wildlife. Other examples of BMP's include those for watershed restoration, wetlands protection, and floodplain planning.

Management **Opportunities** and Potential to Resolve Conflicts

Regional riparian area management policy is currently being implemented. Riparian areas are protected so that habitat for riparian-dependent wildlife and fish is maintained, and aesthetically pleasing areas for fishing and other recreation are provided. The SMZ policy designed to protect hydrologic values will remain in effect and complements riparian area management

Timber management will be allowed only under special guidelines and is subject to riparian area-dependent resource needs. Grazing will be continued provided watershed, fishery, and wildlife values can be maintained. Some streams will be fenced, but generally the emphasis will be to control grazing impacts through permit administration and improved range management

New campgrounds will be excluded from riparian areas. Undeveloped camping will be moved or improved to mitigate vehicle and camping impacts. At heavily impacted recreation sites and range sites in the Granite Chief Wilderness, riparian ecosystems will be rehabilitated as funds and opportunities arise.

The Forest will improve the condition of riparian areas by better coordination with other resource activities: an example would be to take advantage of opportunities to do direct habitat improvement in riparian areas by planting new species where diversity can be enhanced

SENSITIVE PLANTS

The sensitive plant list for the Pacific Southwest Region was originally developed by combining the Smithsonian and the California Native Plant Society lists. The TNF was then provided with a list of plants known or suspected to occur in the TNF or its vicinity. Changes in the PSW Regional list are made as new information becomes available, resulting in occasional changes to the TNF list

Currently, the TNF has one Federally endangered and twelve listed sensitive plant species known or suspected to occur in the TNF or its vicinity; no plant is listed as threatened. All necessary steps will be taken to ensure that agency actions do not jeopardize the continued existence of these species, and that viable populations of sensitive plants will be maintained. Table 3.21 lists these plant species.

TABLE 3.21 ABBREVIATION CODES, ENDANGERED AND SENSITIVE PLANT SPECIES LIST

Endangered		
1.	MASO	<i>Mahonia sonneri</i> (Truckee Barberry)
Sensitive		
1.	ARCO	<i>Arabis constancei</i> (Constance's rock-cress)
2.	CAPA-4	<i>Carex pauciflorus</i> (Few fruited sedge)
3.	ERUMT	<i>Eriogonum umbellatum</i> var. <i>torreyanum</i> (Torrey's Buckwheat)
4.	IVAP-1	<i>Ivesia aperta</i> (Sierra Valley Ivesia)
5.	IVSE-1	<i>Ivesia sericoleuca</i> (Plumas Ivesia)
6.	IVWE	<i>Ivesia webberi</i> (Webber's Ivesia)
7.	LECAN-1	<i>Lewisia cantelowii</i> (Wet cliff Lewisia)
8.	LEPYL	<i>Lewisia pygmaea</i> ssp. <i>longipetala</i> (Large flowered pygmy Lewisia)
9.	LESE	<i>Lewisia serrata</i> (Sawtoothed Lewisia)
10.	PHST-2	<i>Phacelia stebbinsi</i> (Stebbins' Phacelia)
11.	SIIN	<i>Silene invisus</i> (Hidden petal champion)
12.	VACO-1	<i>Vaccinium coccinium</i> (Scarlet huckleberry)

SOILS

The western third of the TNF contains deep canyons separated by nearly level to sloping, broad ridgetops. Soils on the steep canyon sideslopes have developed mainly from metasedimentary and ultrabasic bedrock; soils on the ridgetops have developed primarily from andesitic tuff breccia mudflows of the Meherthen Formation. Soils in the vicinity of Bullards Bar Reservoir have developed mainly from granitic bedrock. The western third of the Forest contains the most productive soils.

Soils in the eastern third of the Forest occur on gentle to steep slopes and in broad valleys. These soils have developed from rhyolitic and granitic bedrock and from alluvial deposits. Low precipitation is a major limitation to productivity.

Soils at higher elevations (5,500 to 9,500 feet) along the crest of the Sierra have developed from volcanic, metasedimentary, and granitic rocks, and from glacial-alluvial deposits. Steep slopes and shallow, rocky soils limit productivity in much of this central third of the Forest.

Forest Service direction concerning soil productivity and conservation is to maintain or enhance soil productivity. No management action will be intentionally taken that will irreversibly impair soil productivity. Soil characteristics and qualities that are indicators of soil productivity will be monitored to detect changes caused by management activities.

Because soil characteristics affect timber growth rates, forage quantity and quality, ease of road and campsite construction, and other Forest resource production or use, they are a major consideration in management activities.

Soil productivity is the inherent capacity of a soil to support the growth of specified plants, plant communities, or a sequence of plant communities. One estimate of soil productivity is timber site class, a measure of potential timber growth. Site class 1 is the most productive, site class 6 the least. Table 3.22, the 1980 TNF timber inventory, updated to reflect the current land base, lists the following acres in each TNF Forest Survey site class.

TABLE 3.22 - THE 1980 TNF TIMBER INVENTORY

Site Class	Acres	Percent of TNF
1	0	0
2	3,918	0.5
3	250,097	31.5
4	195,899	24.7
5	168,441	21.2
6	28,919	3.6
Not Capable	147,110	18.5
TOTAL	794,374	100.0

cycling is lost by removal of biomass, displacement into tractor piles, or by burning the forest duff and litter.

The implementation of Forestwide standards and guidelines for these soil qualities would minimize the risk of reducing soil productivity. The effectiveness of Forestwide standards and guidelines in maintaining soil productivity will be monitored.

Soils on about **23,000** acres of capable forest land have been inventoried as eroded or altered. About 5,000 acres of this total are classified as eroded or severely eroded, and 18,000 acres as altered by terracing (contour furrowing) or by displacing the surface soil into windrows or piles. Disturbance on these soils has reduced their productivity by one or more site classes. Soil productivity on many of these sites could be increased through soil improvement practices such as fertilizing and respreading topsoil now in windrows or piles.

A third-order soil resource inventory (SRI) has been completed for the TNF. Soil maps have been printed at a scale of 1:24,000. Soil descriptions, maps, and management interpretations are in the planning records. The soil maps delineate different soils in sufficient detail for timber compartment planning and for some project planning. The soil maps may not have the detail necessary for site-specific project planning or design.

SPECIAL INTEREST AREAS

Special Interest Areas (SIAs) are established to protect special or unique geologic, ecologic, or cultural features. The TNF has no established SIAs.

The Special Interest Area Establishment Report for the Placer County Big Tree Grove Botanical Area is being prepared. Potential SIAs on the TNF include the Devils Postpile and Glacier Meadow Geologic Areas, the Grouse Falls Scenic Area, the Hawley Lake, Meadow Lake, Boca, and Kyburz Cultural Areas, the Macklin Creek Lahontan Cutthroat Trout Habitat Area, the Independence Lake Cutthroat Trout Habitat and Geologic Area, and the Sierra Buttes, Little Truckee River Terrace, Sagehen Basin, Mason Fen, Sagehen Headwaters, San Juan Ridge, and the Headwaters Basin of the North Fork of the American River Ecosystem Study Areas.

A detailed evaluation of all the SIAs is contained in Appendix C. This evaluation presents for each area: (1) a description of the physical setting, (2) an analysis of the environmental consequences of designating the area to specific uses, and (3) findings as to the suitability, availability, manageability, and boundaries as an SIA. A map of SIA locations is found in the 'Maps' packet. Additional maps, documents, working papers, and other information relating to the SIA planning process are available for public review at the Forest Supervisor's Office, TNF, Nevada City, California.

Following is a brief description of each potential Special Interest Area. Cultural sites not selected for SIA designation will be managed to maintain their important values in accordance with FSM 2361.

Hawley Lake Cultural Area (5,323 acres). This area is located in the upper reaches of the Pauley Creek drainage on the Downieville Ranger District. Numerous historic and prehistoric cultural resource sites occur in the area, including one which is in the National Register of Historic Places.

Kyburz Cultural Area (1,097 acres). This area is located on the Sierraville Ranger District in the Little Truckee River drainage. The area is one of the principal waterfowl nesting areas on the TNF. Prehistoric archaeological evidence indicates that the area has been a prime wildlife area for thousands of years. One of the major routes to the Comstock silver mines in Nevada passed through Kyburz Flat.

Boca Cultural Area (1,976 acres). Located on the Truckee Ranger District, this area shows substantial evidence of prehistoric and historic use. The former town of Boca figured prominently in the development of industries such as logging, mining, and ice manufacturing in the nineteenth century. The area provided wood products (lumber, charcoal, etc.) and ice to the Comstock mines in Nevada and was a major stopping point on the transcontinental railroad from the 1860's to the early 1900's.

Meadow Lake Cultural Area (58 acres). This area on the Sierraville Ranger District includes the remnants of the former town of Summit City. When gold was discovered there in 1863, a city sprang up overnight. Because of the inability to extract the gold from the ore found in the area, the town died within two years. The area includes Meadow Lake reservoir, constructed in the nineteenth century for mining, and also includes extensive evidence of prehistoric use such as petroglyphs and other cultural resource sites.

Glacier Meadow Geologic Area (84 acres). This area is located on the Truckee Ranger District on the western slope of the Sierra Nevada. This distinctive and unusual glaciated landscape of scoured and polished granite is overlain by large boulders left when the glaciers retreated over 10,000 years ago.

Devils Postpile Geologic Area (69 acres). This prominent feature on the Downieville Ranger District is located near the Plumas and TNF boundary. The geologic feature is a large vertical pillar of basalt rock that rises above the surrounding landscape.

Placer County Big Tree Grove Botanical Area (346 acres). Located on the Foresthill Ranger District, this area contains a unique grove of giant sequoias (*Sequoiadendron giganteum*). The grove represents the northernmost natural occurrence of these giant trees in the Sierra Nevada. Because they represent an isolated stand (the closest occurrence of giant sequoias is many miles to the south in Calaveras County), they are of great interest to botanists. They have been a popular tourist attraction since the 1800's and each tree bears the name of a prominent American, such as Theodore Roosevelt and General Pershing.

Grouse Falls Scenic Area (220 acres). Grouse Falls is one of the highest cascading falls in California. It is located in the steep, rugged Last Chance area of the Foresthill Ranger District. The falls are on Grouse Creek and can be reached only by a primitive trail.

Sierra Buttes (1,827 acres). Located on the east side of the Buttes on the Downieville Ranger District is the southernmost occurrence of green spleenwort (*Asplenium viride*). Mountain hemlock (*Tsuga mertensiana*) is also found in the Sierra Buttes.

Headwaters Basin of the North Fork of the American River (9,381 acres). This area includes the Onion Creek Experimental Forest and is located on the Truckee Ranger District. The basin provides numerous opportunities for study and research of all aspects of plant, animal, and aquatic ecology.

Independence Lake (81 acres). Independence Lake, located on the Truckee Ranger District, supports a genetically pure strain of Lahontan cutthroat trout. Surrounding the lake are Quaternary glacial deposits that represent the northernmost extent of Sierra Nevada "classical" glacial sequences.

Sagehen Basin (8,373 acres). This area is located on the Truckee Ranger District and is recognized for the diversity and variety of its springs and spring habitats, including the minerotrophic peatlands (fens). The largest of the fens is the Mason Fen.

Mason Fen (30 acres). This fen is the largest fen in the Sagehen Creek Basin and has been the subject of research since 1957. The Mason Fen area is about 30 acres as compared to over 8,000 acres for the above Sagehen Basin.

Little Truckee River Terrace (468 acres). Located on the Truckee Ranger District, this area is on the geologic terrace formed by glacial dam-burst floods from Lake Tahoe. The soils are scientific standard reference soils used to calibrate degrees of soil development over time.

San Juan Ridge (6,541 acres). This area, located on the Nevada City Ranger District, is recognized for its epoch geology and historic hydraulic mining activity.

Macklin Creek (380 acres). This creek is located on the Nevada City Ranger District and contains the only existing remnant of the Pyramid Lake population of the Lahontan cutthroat trout.

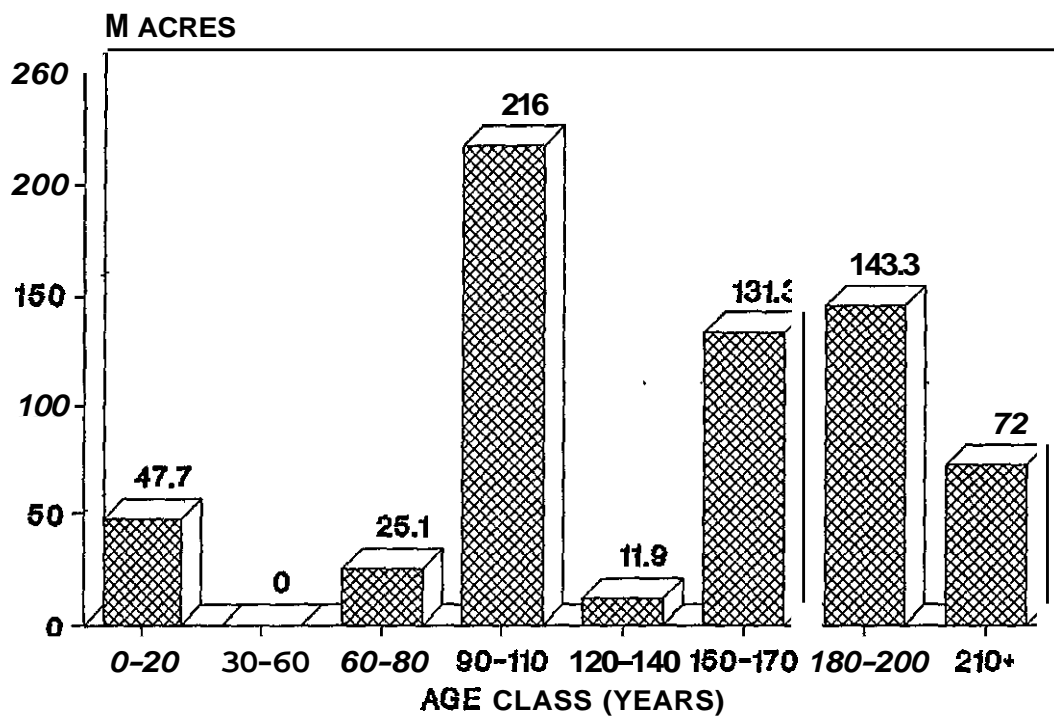
Sagehen Headwaters (79 acres). The headwaters of Sagehen Creek are located in a glacial cirque basin on the Truckee Ranger District. The area is noted for its rich diversity of plant and aquatic species and 'avalanche' forest of virgin red fir (*Abies magnifica*), mountain hemlock, and mountain mahogany.

(*Cercocarpus betuloides*). Significant opportunity exists for botanical research and ecological study in this area

TIMBER

The available wood supply from the TNF is based upon the amount of land which is capable of producing at least 20 cubic feet of timber per acre per year (estimated at 649,867 acres) and which is not withdrawn from timber production. Timber-producing land is classified into five major forest types. (1) mixed conifer, (2) red fir, (3) eastside pine, (4) lodgepole pine, and (5) hardwoods. There are 449,842 acres of prime forest land (land capable of producing 85 cubic feet of timber per acre per year or more) on the TNF

Figure 3.4: TNF Current Age Class Distribution



The large number of acres of 90- to 110-year old stands is a result of timber harvesting associated with gold mining and railroad logging. The stands older than 130 years represent the natural stands that occurred before settlement began in the 1850's. Many of these older stands have been harvested by a variety of partial cuts. The large forest fires such as Mountain House, Donner, and Volcano and subsequent reforestation efforts represent the stands in the zero to twenty-year age class. The lack of stands in the 30- to 50-year age class results from early fire protection efforts and very little regeneration cutting after the establishment of the TNF.

Current Timber Sale Program

The current timber management direction was established in the October 16, 1978, TNF Timber Management Plan and Final Environmental Statement. The timber management program includes commercial timber harvesting, salvage of dead and dying timber, reforestation, tree improvement, timber stand improvement, and fuelwood production. The Timber Management Plan provides for a schedule of harvest and regeneration

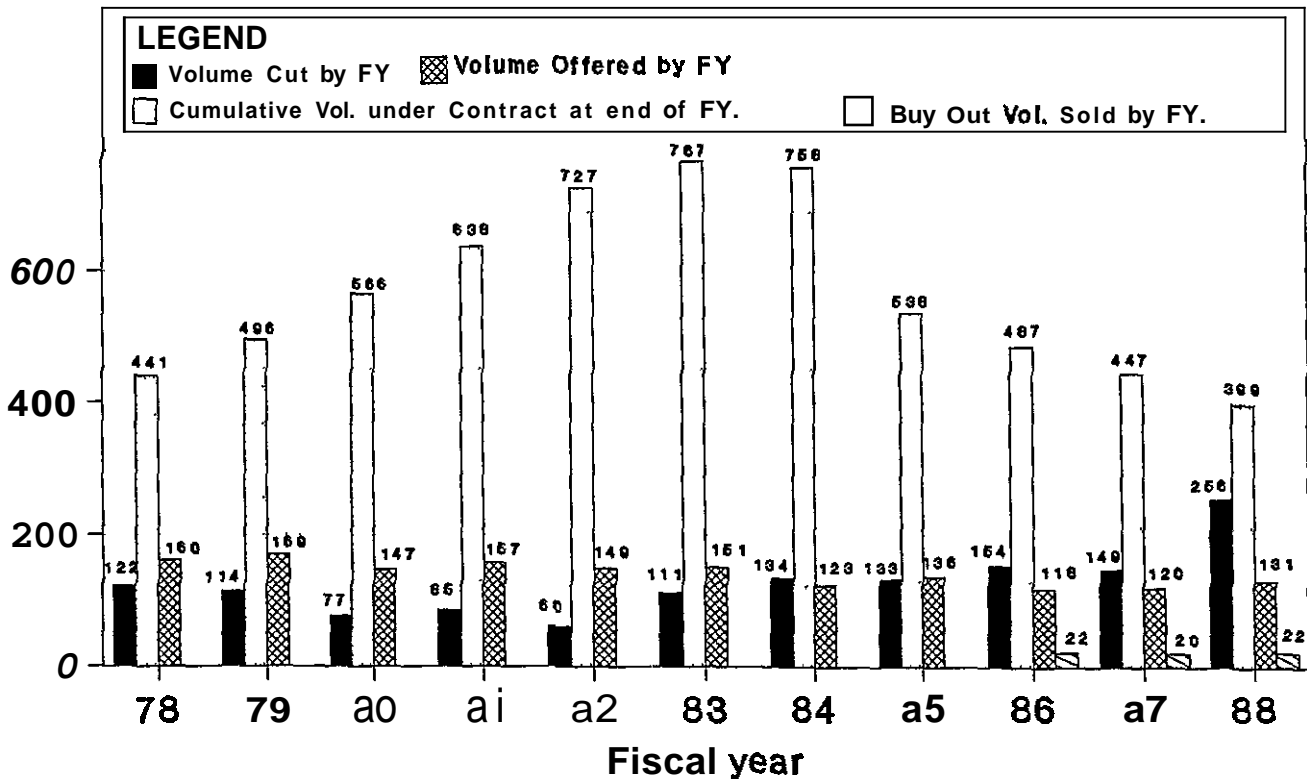
based on sustained yield, **with** a guide for coordination of timber production with other National Forest resource **uses**. Land most suited to timber production is being intensively managed for timber commodity uses. Timber management **objectives** depend mainly on the use of even-aged silvicultural systems to reach the goal of sustained yield.

The average annual programmed sale quantity is 1476 million board feet (MMBF). The majority of this volume is derived from the 306,000 acres established for intensive forest management in the Timber Management Plan. This Plan emphasizes even-age management and regeneration harvesting of under-stocked stands. Table 3.23 summarizes the major cutting practices scheduled by the current Timber Management Plan for the period 1979-1988.

TABLE 3.23 MAJOR CUTTING PRACTICE SCHEDULE OF 1978 TIMBER MANAGEMENT PLAN

Cutting Method	Volume MMBF	Acres
Clearcutting		
1. Mixed Conifer	656	30,000
2. Eastside Pine	3	1,500
3. Total	659	31,500
Shelterwood		
1. Mixed Conifer	256	21,000
2. Eastside Pine	85	4,000
3. Total	341	25,000
Regeneration Total	1,000	56,500
Intermediate & Salvage	290	
Standard Component Total	1,290	
Special Component	EO	
Marginal Component	100	

Figure 3.5: Comparison of Tahoe National Forest Timber Sold and Harvested



In summary, the TNF's multi-year extension plans for all purchasers are as follows

Number of Purchasers	4
Number of Sales	17
Volume of Timber	126 MMBF

The Federal Timber Contract Payment **Modification** Act (Public Law 98-478) was enacted October 16, 1984. This law and the subsequent implementation regulations allowed purchasers of Federal timber to return to the Forest Service, upon payment of a buy-out fee, a maximum of 200 million board feet per company. Approximately 222 MMBF, with a total value of \$55.8 million, was returned to the Tahoe NF under this program.

Volume sold and harvested in the eastside pine type (most forested lands east of State Highway 89) has averaged 3 MMBF annually. Some timber sales have been offered, but not sold, due to poor market conditions. Although the terrain is flat and well roaded, the wild second-growth trees are small, probably a result of early excessive stocking following logging at the turn of the century. Many of these stands are stagnated, with little net growth. Managed plantations such as the Donner burn, in contrast, are showing excellent growth for their sites with no sign of stagnation. Early stocking and competing-vegetation control are especially important on lower sites and the difference in growth between plantations and wild stands

shows the positive effects of management. If the productive potential of eastside sites are to be realized, stagnated wild stands will need to be replaced by new plantations with improved genetic stock

In early 1989 there were indications that the market for small logs on the eastside of the Forest would be improving, although it may take several years to establish a clear trend

The 1975 reforestation backlog identified through aerial photo surveys 16,939 acres needing reforestation. This backlog has been eliminated through (1) planting (7,498 acres), (2) stand examinations reporting adequate existing stocking (7,552 acres), and (3) rejection for reforestation because of other multiple-use needs (1,889 acres).

A total of 21,280 acres were reported on the 1988 Reforestation Needs Report. Most of these acres are a result of timber harvesting, but thousands of acres were added by the large wildfires of 1987. Most of the acreage will be reforested by 1991, but the actual schedule will depend on funding and the availability of silvicultural tools including herbicides.

Timber stands needing precommercial thinning and release are the two types of projects in the timber stand improvement (TSI) needs report. As of October 1, 1988, 10,600 acres have been tentatively identified as needing precommercial thinning and 26,490 acres as needing release. Competing vegetation is the major forest pest in management of young timber stands. The 26,490 acres needing release consist of young seedling and sapling conifers competing for light, moisture, and nutrients with a wide variety of grass, forb, brush, and hardwood plants. Elimination of the current needs will require a wide variety of techniques. The threat of large, damaging fires in extensive plantations and precommercial thinning areas will require proper fire hazard reductions to ensure adequate protection.

Plantation release projects have been accomplished on about 1,000 acres per year during the last ten years. Mechanical and manual control techniques accounted for about 16 percent of the acres per year and herbicide application about 84 percent of the acres per year until 1984. In the spring of 1984, a moratorium on the use of herbicides resulted in subsequent accomplishment of all release by manual or mechanical methods. The unavailability of herbicides as a vegetation management tool has resulted in greatly increased costs for control of competing vegetation. Funding has not always kept pace with vegetation management needs. Livestock grazing for vegetation control has increased in recent years. An estimated 800 to 1,000 acres of plantations are grazed per year to control competing vegetation.

Herbicide use prior to the 1984 moratorium resulted in public concern specifically centered around the use of phenoxy herbicides such as 2,4-D. This concern resulted in several administrative appeals and legal challenges on the use of herbicides in the early 1980's throughout the PSW Region, including the TNF. Other pesticides were also subject to similar public concerns, although not to the degree expressed over the use of phenoxy herbicides. From 1976 to 1984, pesticides were applied to about 1,119 acres of TNF lands per year by contractors, permittees, and the Forest Service. Application of herbicides accounted for 1,051 acres, insecticides for 36 acres, rodenticides for 26 acres, and fungicides for 6 acres of the total annual pesticide use. In recent years pesticide use has been limited to gopher control, occasional treatment of cut stumps with borax for root disease control, and minor use at the Foresthill Seed Orchard.

On February 27, 1989, the Regional Forester issued a decision on the Final Environmental Impact Statement (FEIS), Vegetation Management for Reforestation. The selected alternative allows for the full range of methods for controlling competing vegetation to be considered, including the limited use of herbicides. As of May, 1989, the moratorium on herbicide use had not been lifted by the Chief of the Forest Service and remains in effect.

Additional discussion on the current situation and environmental effects of forest chemicals is contained in the Environmental Statement for Forest Reestablishment on National Forests in California (1), (2), (3), and (4), and other Forest Service sponsored studies (5), (6), (7), and (8).

1. USDA-Forest Service. Environmental Impact Statement - Vegetation Management for Reforestation Pacific Southwest Region USDA-Forest Service, Region 5. February 1969

2. USDA-Forest Service. Environmental Statement - Forest Reestablishment on National Forests in California. California Region - Forest Service. June 21, 1974.
3. USDA-Forest Service. Draft Environmental Impact Statement-Vegetation Management for Reforestation. Pacific Southwest Region USDA - Forest Service, Region 5. July 1983
4. USDA-Forest Service Supplement to the Draft Environmental Impact Statement-Vegetation Management for Reforestation. Pacific Southwest Region. USDA - Forest Service, Region 5. April 1986.
5. Dost, Frank N., Toxicology of Phenoxy Herbicides and Hazard Assessment of Their Use in Reforestation. USDA-Forest Service, Region 5. May 1978.
6. USDA-Forest Service. Herbicide Background Statement Pacific Northwest Region. USDA-Forest Service, Region 6. 1981.
7. SRI International. A Case-Control Study of the Relationship between Exposure of 2,4-D and Spontaneous Abortions in Humans. 1981.
8. Norris, Logan. The Movement, Persistence, and Fate of Phenoxy Herbicides, and TCDD in the Forest. Pacific Northwest Forest and Range Experiment Station. 1981.

The National Forest Management Act regulation 36 CFR 219 14, Timber Resource Land Suitability, describes the process for identification of lands capable, available, and suitable for timber production. Details and the results of this process for the TNF are described in Appendix K.

The minimum biological growth potential is defined as all land capable of producing at least 20 cubic feet of timber per acre per year for fully stocked natural stands. The land capable of timber production on the TNF is 649,867 acres. There are 31,732 acres of noncapable forested land and 112,775 acres of nonforest land.

Lands administratively withdrawn from timber production by the Chief of the Forest Service or higher authority are the North Fork American Wild River, the Granite Chief Wilderness, and the Onion Creek Experimental Forest. This land is not available for timber production. This removes a total of 20,849 acres of capable land from timber production for all alternatives, leaving 629,018 acres of land considered as tentatively suited. The disaggregation by forest type is shown in Table 3 24.

TABLE 3.24 ACRES OF TENTATIVELY SUITED LAND FOR TIMBER PRODUCTION

Forest Type	Acres	Percent
Mixed Conifer	361,797	57.5
Red Fir	100,818	16.0
Eastside Pine	104,281	16.6
Lodgepole Pine	9,041	1.5
Hardwood-Conifer	36,660	5.8
Other	16,256	2.6
TOTAL	629,018	100.0

Timber Demand

Timber demand cannot be projected from historical sale trends on the TNF. Most timber offered in viable sale packages in the past decade was sold therefore, past sale trends only reflect the amount of timber that the Forest was able to offer for sale rather than the amount demanded. Almost all of the timber is

sold to eleven companies operating twelve sawmills within 50 miles of the Forest. Over the short run (0 to 5 years), mill capacity in the local area could limit the amount of timber that can be sold. Over longer periods, however, both the number and size of mills operating in the local areas historically have adjusted to fit the supply of available private and National Forest timber.

The demand for timber on the TNF is determined by trends in Regional and National markets for wood products. These markets are primarily influenced by population and income levels, interest rates, the number of housing starts, and the level of imports and exports in wood products. The size of Regional and National markets is very large in comparison to the productive capacity of the TNF, and the Forest by itself is unable to significantly affect market prices. Over the long term, timber price trends have moved upward, reflecting the increasing scarcity of timber. This pattern is expected to continue in the future. (See Appendix B for the timber prices and trends used in the modeling and analysis process. For a comprehensive analysis of timber markets, see *An Analysis of the Timber Situation in the United States 1952-2030*, USDA--Forest Service, Forest Resource Report No. 23, December 1982)

The demand for wood as home fuel has increased greatly and then fell sharply within the last decade. The increase was most rapid after the large increases in energy prices that occurred in the late 1970's. In 1979, the number of cords cut on the Forest was approximately 26,000. By 1983 the number of cords cut had increased to 35,000. In 1987 the number had fallen to less than 18,000 cords. The most recent trend can be attributed to lower home heating costs and less interest in fuelwood gathering since the energy crisis. Higher air quality standards are also becoming a factor in fuelwood demand, particularly in the Reno area.

Predicting Potential Harvest Volumes

Both management intensity levels and the quantity of land allocated to timber management practices affect the harvest level. A given level of timber production can be achieved by manipulating these factors. Thus, RPA timber goals could be achieved by practicing low intensity management on a large acreage or by practicing high intensity management on a smaller acreage.

The NFMA regulations require the use of the most cost-efficient combination of management practices examined that can meet planning objectives. The regulations also specify that cost-efficiency analyses use discounted costs and benefits. Any harvest schedule formulated for the Forest will be affected by these requirements.

In developing harvest schedules, the objectives most often used are 1) to maximize the volume of sustainable harvest and 2) to maximize the present net value (PNV) of the Forest. The objective of maximizing PNV is **most** comprehensive. It evaluates the financial attractiveness of all possible management prescriptions.

A harvest objective (level) is often determined by maximizing timber volume for the first decade, subject to timber policy constraints such as non-declining yield or ending inventory, and subject to objectives for other resources. A cost-efficient harvest schedule is then developed which achieves that timber harvest objective along with objectives for other resources.

The NFMA regulations define long-term sustained yield (LTSY) capacity as the highest uniform yield that may be sustained under a specific management intensity on lands being managed for timber production, consistent with multiple use objectives. In relation to a wide range of possible LTSY's, the existing forest inventory is deficient in both volume and growth. If harvests were scheduled at LTSY capacity, the standing timber on suitable lands plus its growth would be harvested in less than one rotation period. To meet the nondeclining yield policy, the Forest's timber inventory must be meted out until new stands of rotation age are available. Under this concept harvests would have to be below the LTSY capacity until the forest is fully regulated.

Essentially, a fully regulated forest is one in which age and size classes are represented in such proportions and growing at such rates that approximately equal annual or periodic yields of products of desired size and quality may be obtained. To meet LTSY capacity, age and size classes would range from seedling to an age where growth is at culmination of mean annual increment (CMAI). Stands produce at the highest rates if harvested at culmination of mean annual increment. CMAI is normally not applied to unmanaged

(wild) stands because stand history, especially mortality, is unknown. In regenerated stands (managed plantations), CMAI is influenced by stocking control (thinning). In any discussion of CMAI, it is important to know if commercial thinning yield was included and what measure was used, i.e., cubic feet.

Silvicultural Systems

Three major forest types occur on the commercial forest land of the Tahoe National Forest: Sierra Nevada Muted Conifers (Muted Conifer*), Society of American Foresters (SAF) cover type 243; Red Fir, SAF cover type 207; and Northwestern Ponderosa Pine ('Eastside Pine'), SAF cover type 237. Table 3.24 displays the number of acres of land tentatively suited for timber production by forest type.

Each of the major types are described in detail and analyzed for biologically feasible silvicultural systems in Agriculture Handbook No 445, 'Silvicultural Systems for the Major Forest Types of the United States.' Information from that publication is summarized for each major forest type on the Tahoe National Forest, supplemented by local information. Additional information on Silvicultural systems is in Appendix L.

On the Tahoe, the mixed conifer belt occurs from about 3,500 to 6,000 feet on the west slope of the Sierra Nevada mountains. Some mixed conifer occurs on the eastside below the red fir belt. At the lower elevations and on south slopes, stands are dominated by ponderosa pine. At higher elevations, white fir becomes the major component of stands. Douglas-fir can be locally important, especially on north slopes, but usually occurs in a mixture, as does sugar pine. White fir and incense-cedar are very shade tolerant and commonly found in the understory at mid and lower elevations. California black oak is the most important hardwood species in the mixed conifer type. Pacific madrone and tan oak occur as minor species. Jeffrey pine is found on ultramafic (serpentine) sites and at higher elevations. The northernmost natural grove of giant sequoia, the Placer Grove, is part of a mixed conifer stand at 5,200 feet in the southern part of the Tahoe.

Decades of partial cutting and fire suppression have changed the composition of many stands from relatively shade intolerant species such as ponderosa pine, sugar pine, and Douglas-fir to tolerant species (white fir and incense-cedar). Natural regeneration of shade intolerant species, especially where there is not bare mineral soil and sunlight, is spotty and unpredictable. Competing vegetation is the primary reason for failure and competition for available moisture is the most limiting factor in stand establishment and growth. Incense-cedar and white fir are more successful in natural regeneration. Various insect and disease problems have accompanied the species shift, including dwarf mistletoes and Douglas-fir tussock moth infestations (tussock moths feed on white fir in the Sierra). Plantations dating from the 1950's and 1960's are almost entirely comprised of ponderosa pine, for that species was only available then from nurseries. These older plantations for the most part originated from wildfires. More recently established plantations are commonly dominated by ponderosa pine, but also contain Douglas-fir, sugar pine, and white fir. Incense-cedar will usually become established naturally under planted trees and brush. Giant sequoia, considered intermediate in shade tolerance, is occasionally planted as a minor species, particularly on the Foresthill Divide.

There are several decades of experience and research in the application of even-aged silvicultural systems in the mixed conifer type. The less shade tolerant conifer species (ponderosa pine, Douglas-fir, sugar pine) respond well to even-aged systems because these systems provide the full sunlight conditions under which these species become established naturally (e.g., from events such as wildfire or blowdown). If competing vegetation and stocking levels are controlled, plantations can be expected to significantly exceed the growth and yield of wild stands.

The trend in clearcutting on the Tahoe has been toward leaving groups of healthy advanced reproduction up to 16' dbh, hardwoods, down logs, and snags to meet objectives for wildlife diversity, visual quality, and soil productivity. These stands are interplanted with genetically improved stock following logging and site preparation. To the public these stands appear to be managed under an uneven-age system. While still labeled as "clearcuts," they vary significantly in appearance and environmental qualities from openings that are completely cleared. Where silviculturally sound, this type of cutting is being routinely implemented.

Most experience in uneven-aged systems is derived indirectly from partial cutting and the application of the Unit Area Control method in the 1960's. There was no long-term forest regulation scheme associated with this method, but the growth response of trees and stands is indicative of that expected with uneven-aged

silvicultural systems Intolerant species were found to require at least a 1/4-acre opening to become established. Long-term effects on tree growth in these small openings are not known, but it is generally accepted that shade intolerant conifers would not be perpetuated under a single-tree selection system. Openings of 1 to 2 acres are regarded as a necessary minimum size to maintain ponderosa pine as a species component in stands.

White fir and incense-cedar will regenerate under a single-tree selection system, but volume growth diminishes as stand density increases. Brush competition remains a limiting factor in all but the densest stands, so vegetation control would be necessary under both even- and uneven-aged systems

In addition to the considerations of maintaining an acceptable level of stand growth and mixture of tree species, the single-tree selection system has some other disadvantages when applied to the mixed conifer type. These include: '...inability to control dwarf mistletoes, diseconomy of scale for cultural treatments (including site preparation), and the immense cost of inventorying and maintaining required age-class distribution' (from Ag. Handbook No. 445).

The red fir type extends above the mixed conifer type at elevations of about 6,000 to **7,500** feet. White fir occurs in nearly pure stands (SAF cover type **207**) situated in a narrow elevational band between the mixed conifer and red fir types. For purposes of planning and inventory, pure white fir stands are included in the acreage for the mixed conifer type. However, from the standpoint of silvics and stand management, white fir stands are best associated with the red fir type Along a gradient of increasing elevation, pure white fir stands give way to stands containing increasing amounts of red fir Pure red fir stands occur at higher elevations; on wet sites lodgepole pine is a common associate. Lodgepole pine may act as a "nurse crop" for red fir establishment in some situations. Jeffrey pine and western hemlock are occasional minor stand components at higher elevations. Commercial hardwoods do not generally occur on upland, mesic sites.

Both red and white fir are moderately shade-tolerant. They are both able to regenerate naturally under partial shade and light fuels, but control of competing vegetation (grass, forbs, brush) and rodents is necessary for successful stand establishment and growth. Pocket gopher control is a critical factor in the establishment of true fir stands Red and white fir will respond to release after moderate understory or brush suppression. Both typically grow in dense, even-aged stands with high standing volume at maturity.

Dwarf mistletoes infect about 30 to 40 percent of natural red and white fir stands Mistletoe causes growth losses, but also weakens trees and makes them vulnerable to other pathogens and insects. Large numbers of true fir were killed in 1989 as a result of drought and a pest complex involving fir engravers, cytospora canker, and dwarf mistletoe interactions. Small understory trees are susceptible to mistletoe infection from overstory trees.

Both red and white fir can be regenerated by planting Seedling survival is not as high as the pines and Douglas-fir, but planting is a common practice for reforestation. Red fir artificial regeneration costs are the highest of the major conifer species in the Sierra.

Until recently, low demand for red and white fir stumpage existed on the Tahoe National Forest. This has influenced timber management activities in the true fir type In the last decade, increased demand has resulted in an increase in harvest activity in this type. For the most part, even-aged silvicultural systems have been applied. Shelterwood and small strip clearcutting methods have been favored. Modified clearcutting practices, including leaving groups of healthy advanced reproduction, snags, and down logs, are being implemented in areas prescribed for clearcutting. Removal of shelterwood overstory trees at an early stage of stand development has been found to be essential for stands infected with dwarf mistletoe. Control of competing vegetation is also critical, particularly grasses and forbs, because they contribute to pocket gopher problems. Where these conditions have been met, regeneration is dense and grows rapidly.

Uneven-aged management is possible in stands that have not been infected with dwarf mistletoe. Single-tree selection would be very difficult because openings are needed for regeneration and reasonable growth. True fir is susceptible to rot from mechanical damage. The frequent stand entries necessitated by single-tree selection systems elevates the risk of losses to decay and rot organisms in the residual growing stock.

Group selection is feasible, however control of competing vegetation and gophers would be essential to successfully apply this method

Eastside pine mainly occurs east of State Highway 89. Jeffrey and ponderosa pine are the only conifers present in many stands in this type. This type extends into the mixed conifer type where white fir becomes an understory component. Minor amounts of lodgepole pine, incense-cedar, and sugar pine occur in some eastside pine stands. Sites are dry and tree size is smaller than on the westside. Grass, forbs, snowbrush ceanothus, and greenleaf manzanita are common understory components.

Jeffrey and ponderosa pine are usually regenerated by planting, although natural regeneration will occur if seedbeds are adequately prepared, competing vegetation controlled, and overstory trees are widely spaced. Stagnation and bark beetle attacks are problems of dense stands. Stocking control is essential. Eastside pine will release after prolonged suppression if thinned heavily and the remaining crop trees still possess acceptable live crowns and leader growth. Dwarf mistletoe is a major problem in some stands. Annosus root disease in pine is a serious pathogen and appears to be increasing in areas with repeated entries for partial cutting. Damage from porcupines is a local problem in plantations.

Even-aged management has been practiced successfully for decades. Large wildfires such as the Donner Burn (1960) are now pine plantations with good growth rates and relatively few pest problems. Survival rates for planted seedlings is usually excellent where competing vegetation has been controlled. Modified clearcutting practices described in the mixed conifer type section are also used in the eastside pine type

Uneven-aged management, while essentially untried, is feasible. Single-tree selection at wide spacing and low stocking density, in mistletoe-free stands, could be successful. Stocking control of the reproduction would be necessary to avoid stagnation. Small group selection would be more applicable in stands with light mistletoe infections. In heavy mistletoe areas, uneven-age management would be impractical until mistletoe was eliminated from the stand.

VEGETATIVE TYPES (CHAPARRAL)

Two-thirds of the chaparral lands on the TNF occur in scattered parcels of less than 100 acres (Table 3.25) that are too small for cost-effective management units. About 8 percent are in brushland capable of reforestation and another 11 percent are on slopes greater than 50 percent. The steep slopes and shallow soils of these lands severely limit management. Of the 10,673 acres that could be managed as chaparral, over 60 percent is east side rangeland. Thus, only 4,066 acres of shrublands are in parcels of over 100 acres and with slopes less than 50 percent that could be managed for chaparral. Most of these lands are now managed for wildlife habitat through prescribed fire. The current management of these lands for forage and wildlife habitat represents the best opportunities available for management.

Chaparral lands do occur adjacent to the TNF on the west boundary at lower elevations. Management of these private lands through coordinated resource planning benefits adjacent TNF lands. This coordinated planning occurs when requested by adjacent landowners or affected State agencies, such as the California Departments of Fish and Game or Forestry.

TABLE 3.25 - CHAPARRAL VEGETATION

Vegetative Type	Number Of Capability Areas	Acres
Reforestation brushland	210	6,439
Areas less than 100 acres	1,758	53,748
Areas larger than 100 acres with slopes over 50 percent	43	8,453
(BS)* Basin Sage, Bitterbrush, Mountain Mahogany with Perennial Grass, and Wyethia	40	6,607
(CH) Huckleberry Oak, Wyethia, Forbs, Perennial Grass	15	2,397
(CW) Whiteleaf Manzanita, Deerbrush, Bear Clover	7	1,141
(CG) Tobacco Brush, Whitethorn, Greenleaf Manzanita, Huckleberry Oak, Wyethia	3	392
(HG) Whiteleaf Manzanita, Annual Grass, Forbs	1	136
TOTAL	2,077	79,313

* Letters in parentheses () are CalVeg types.

VISUAL RESOURCES

The TNF exhibits diverse and distinctive landscape qualities highly suited to scenic appreciation. One indication of these scenic qualities is the inclusion by California of all four major roads that traverse the TNF - Highways 20, 49, and 89, and Interstate 80 - in the Master Plan of State Highways Eligible for Official Scenic Highway Designation.

While no specific statistical analysis of the demand for visual quality is available, the presence of strong demand can be inferred from a variety of sources. One of these sources is the number of laws and policies that have cited visual quality or scenery as their primary or secondary purpose. The establishment of the State Scenic Highway Master Plan is one indication that the State legislature perceives this demand. In 1965, Regional Forester Charles Connaughton also acknowledged this demand by coordinating Regional Forest Service policy with the Master Plan. He stated that National Forest System lands would be managed to retain natural appearing conditions for public enjoyment by restricting or modifying the cutting of timber in the immediate vicinity of and in the view from eligible highways.

These findings indicate a need for scenic routes and highways, turnouts, and vista points. The State of California has already officially designated the portion of Highway 20 from near White Cloud to Bear Valley, and Highway 49 in Sierra County from the Yuba County boundary to Yuba Summit, as State Scenic Highways.

Another measure of the demand for visual quality is the level of recreation use in activities associated with the enjoyment of scenery. The California State Comprehensive Outdoor Recreation Plan, 1975, projects that the demand in the categories of driving for pleasure, walking for pleasure, and sightseeing will increase 31 percent by 1990.

The California Recreation Patterns Study of 1982 also projected increased participation in activities associated with visual qualities on National Forests in the northern non-metro counties. Visiting scenic areas was projected to increase 31 percent, and nature appreciation was predicted to increase 24 percent between 1980 and 2000. Per capita participation rates will increase about 5 percent during this period, indicating total participation will grow even faster than the population. As the population continues to gain in affluence and education, people will expect a high-quality scenic environment for their leisure-time activities.

Because of this public concern and demand for natural scenic environments, standards have been established for measuring the current and future condition of the visual resource. Inventories of the present state of visual resource values are used to derive two baselines against which the effects of each alternative can be evaluated. The two baselines are the initial visual quality objectives (IVQO's) and existing visual condition (EVC). Visual quality objectives (VQOs) are goals of how the landscape should appear in the future. (See Visual Quality Objectives in Agriculture Handbooks 461 and 462 of the Visual Management System.) The initial VQOs set those goals based on predictions of the amounts of landscape alteration that would be acceptable to the public without consideration of other competing resource values.

The IVQO mapping system is developed by combining indices for the public's concern for scenic quality (sensitivity level); the diversity of natural features (variety class); and the three distance zones of foreground, middleground, and background.

The initial visual quality objectives that have been mapped for the TNF closely follow the Forest Service direction provided by Agriculture Handbook #434 and #462, Superintendent of Documents, Washington, D.C.

Sensitivity Levels

Sensitivity levels are a measure of people's concern for the scenic quality of the National Forests. These people are generally either traveling through the National Forest or permanently or temporarily occupying a use area. Travelways can be roads, trails, or waterways. Use areas can be campgrounds, recreation day-use facilities, or visitor centers. The sensitivity level classification, based on how many people see the area and how concerned they are with aesthetics, is divided into three levels, which apply to all travel routes, use areas, and water bodies:

- Level 1: High sensitivity
- Level 2: Moderate sensitivity
- Level 3: Low sensitivity

The distribution of lands on the TNF between these sensitivity levels by seen area is shown in Table 3.26

TABLE 3.26 - ACRES AND PERCENT OF TNF BY VISUAL SENSITIVITY LEVELS

	1	2	3
Acres	617,119	133,047	44,208
Percent	78%	17%	5%

	A	B	C
Acres	311,728	400,282	82,364
Percent	39%	51%	10%

Distance Zones

A visitor's perception or the sensitivity of a seen area can vary according to how close the viewer is to the seen object. True distance can be a factor of how important a viewed scene is. Detail change can be perceived from where a person is to about one-quarter to one-half mile away. This is called a **foreground** distance zone. The next distance zone is called **middleground**, which is from one-quarter to one-half mile away up to a maximum of 3 to 5 miles. In this distance zone, perception of detail is reduced to being able to still distinguish individual tree forms. The last distance zone is **background**. This zone extends from middleground to infinity.

Foreground, middleground, and background distance zones are evaluated with variety class and sensitivity levels and these are combined for initial VQO mapping.

The initial VQO inventory allocates the land of the TNF to four of five different objectives and is shown in Table 3.28.

	PRESERVATION	RETENTION	PARTIAL RETEN- TION	MODIFICA- TION	MAXIMUM MODIFICATION
Total Acres	0	348,359	342,699	89,414	13,902
Percent	0	44%	43%	11%	2%

	I	II	III	IV	V	VI
Total Acres	30,674	557,830	142,523	55,152	7,413	782
Percent	4%	70%	18%	7%	1%	>0%

One of the indicators used to compare the effects of the alternatives on the visual resource is the visual quality index (VQI). The VQI is a means of quantifying the overall visual quality of the Forest. It reflects both the inherent scenic value of the Forest landscape and the amount of human modification to the landscape. The index is correlated to public preference ratings of these two characteristics, which give higher values to landscapes of higher variety and more natural appearance. A VQI can be calculated for the existing visual condition as well as for the future visual condition (FVC) that **would** result from implementing each alternative. The VQI for the existing visual condition is **52.0**. The VQI for the initial VQO is 51.0. If none of the TNF had been altered by man, the VQI would be 60.0, and if all the TNF had been drastically disturbed, the VQI would be **20.5**.

Over the last 40 years, the VQI has declined steadily. The visual condition of the Forest has been reduced **13.3** percent from **its** original natural condition.

WATER

Water **Production** and Quality

The TNF produces about **3,244,000** acre-feet of water per year within **its** boundaries. Of this total, about **2,000,000** acre-feet are produced from National Forest System land. Gross water yield by watershed is shown in Table **3.30**

About **98** percent of the runoff originating within the TNF boundary meets State and Federal water quality objectives. The remaining runoff fails to meet sediment and turbidity objectives. The main beneficial uses affected by sedimentation are instream needs, particularly fisheries. Major sediment sources are abandoned hydraulic mine **sites**, unmaintained roads, recent wildfires, and logging on sensitive **sites**; some of these have resulted in long-term water quality impacts. Short-term (normally two to four years) sedimentation may be associated with timber-related activities, assuming the inadequate application of BMP's. Sheet and gully erosion are particular problems on certain granitic soils in the Bullards Bar area. Natural instability occurs in the Oregon Creek watershed. The Forest maintains a preliminary Watershed Improvement Needs (WIN) inventory of major suspected sediment sources.

Water quality standards applicable to the Tahoe NF are detailed in 'Water Quality Control Plan Reports' for the North Lahontan and Central Valley Regional Water Quality Control Boards. The Truckee and Little Truckee Rivers and Upper Long Valley watersheds are within the North Lahontan Basin and this part of the Forest must comply with the Lahontan Basin Plan. The remainder of the Forest falls under jurisdiction of the Central Valley Basin Plan. Objectives are very similar for both plans. All public and private entities, including the Forest Service, must comply with the requirements and provisions of the North Lahontan and Central Valley Regional Plans; this includes meeting terms of the State non-degradation policy. In cases where a TNF project results in a water quality problem or violation, the State and Regional Boards retain the authority to intervene under provisions of the Basin Plans.

Water quality is currently maintained and improved through the application of state certified and EPA-approved Best Management Practices (BMP's) for controlling non-point sources of pollution to surface waters. In a 1981 Management Agency Agreement between the State Water Resources Control Board and the Forest Service, it was agreed that reasonable implementation of BMP's would constitute compliance with water quality standards; it is expected that compliance would also result in successful attainment of the State non-degradation policy. Methods and techniques for applying appropriate BMP's are identified during site investigation of Forest projects that have the potential to degrade surface water quality. A more detailed discussion of BMP's and the implementation process is presented in Appendix E of the Forest Plan.

Water Yield Increase

The Forest Service is not actively trying to increase water production on the TNF. Weather modification (i.e., cloud seeding) efforts are occasionally made by various water service and utility districts in the northern portion of the Sierra Nevada. An intensive weather modification study was recently conducted by the U.S. Bureau of Reclamation in the American River drainage. Water yield fluctuations (not caused by climatic

NFS WATERSHED NAME	NFS WATERSHED NO.	EST. GROSS AVG. ANN. RUNOFF (ACRE-FEET) 1/
Sierra Valley (Tahoe NF portion of Mid Fork Feather)	18 02 01 23 02	80,000
North Yuba	1802012501	850,000
Middle Yuba	1802012502	322,000
South Yuba	18 02 01 25 03	653,000
Deer Creek	18 02 01 25 04	15,000
Bear River	18 02 01 26 01	38,000
North Fork American	18 02 01 28 01	454,000
Middle Fork American	1802012802	342,000
Rubicon	18 02 01 28 03	138,000
Upper Long Valley	18 08 00 03 01	2/
Truckee 3/	16 05 01 02 01	241,000
Little Truckee	16 05 01 02 02	111,000 3,244,000 (Public and Private Lands) (2,000,000 from Public Lands only)

The main potential for a permanent water yield increase is to convert deep-soil commercial timber sites to grass. Conversion would directly conflict with the current emphasis to intensively manage timber on the same sites. Intensive timber management has increased water yields compared to yields of the recent past, though less than the maximum potential. The main potential to improve timing of yield (i.e., by delaying snow melt) is to specially design clearcut units in the snow zone above 5,000 feet: this would sometimes result in conflicts with silvicultural priorities in vegetation manipulation.

Assuming management for maximum water yield, the increased yield over current production would be about 8 percent of the net TNF yield of about two million acre-feet per year. Off-Forest demands for water would likely far surpass any increases resulting from vegetation manipulation.

Water Uses and Needs

Current TNF water uses and foreseeable needs, both consumptive and nonconsumptive (except for minimum instream flow needs for fisheries, riparian areas, and recreation uses), have been inventoried and are included in the TNF planning records. Consumptive uses include uses associated with administrative sites, recreation developments, ski areas, organization camps, summer home tracts, livestock, and irrigation needs. Nonconsumptive uses include impoundments and free-flowing waters for recreation, fisheries, and wildlife. As documented in the Analysis of the Management Situation, the TNF currently uses about 800 acre-feet of water annually for consumptive uses and 6,800 acre-feet for nonconsumptive uses. Future needs (by the year 2030) include an estimated additional 1,800 acre-feet for consumptive uses and about 400 acre-feet for nonconsumptive uses. Groundwater sources are needed to provide safe and relatively constant water supplies for campgrounds and for livestock and domestic use. Groundwater avoids problems of contamination and intermittency that are common with surface sources. Demands are slowly increasing. Total demands are relatively small.

Approximately 90 percent of the current and foreseeable TNF consumptive needs occur from May through October during the heavy recreation and range use season, and for TNF administration and protection purposes.

Existing and future water needs for State and private uses within the TNF boundary are undetermined. The anticipated sum of Forest, State, and private consumptive uses of water within the TNF boundary, however, is minor in proportion to the total annual TNF production.

In spite of low water needs within the TNF boundary, there may be future availability problems. The extent of these needs is undetermined because of uncertain socioeconomic factors. Already, water availability is limited in Sierra Valley (adjudicated), Deer Creek (fully allocated), and the Truckee-Little Truckee watershed (possible adjudication). New appropriative uses of water in these watersheds are difficult to acquire, although it is possible to exercise riparian rights. The amount of existing shortages in the Sierra Valley, Deer Creek, and Truckee River watersheds is unknown. Anticipated shortages in these and other National Forest System watersheds are also unknown.

The exact off-Forest demand for TNF water in the Sacramento River system is difficult to trace because water from the TNF combines with water from private land and public land, including five other National Forests, Bureau of Land Management, and State land, in the watershed. About 85 percent of off-Forest consumption is used in agriculture. As noted, the off-Forest demand for the Truckee River water already exceeds the current production: the greatest needs are for irrigation in Nevada, maintenance of Pyramid Lake, and municipal and industrial use in the Reno and Sparks area.

Sensitive Watershed Lands

Over 105,000 acres of sensitive watershed lands are characterized primarily by oversteepened slopes and very high erosion potential. The amount of sensitive watershed lands that are actively unstable is not extensive on the Forest, and is restricted to a few highly visible locations, such as the Oregon Creek slides in the Gales Orchard area. The 105,000 acres of sensitive watershed lands include the following:

- o 44,000 acres of land with **slopes** over 70 percent.
- o 15,000 acres of soils **with** 50 percent or more rock outcrops on slopes of 50 to 70 percent.
- o 43,000 acres of lithic and shallow soils on slopes of 50 to 70 percent.
- o 1,000 acres of glacial soils on slopes of 50 to 70 percent.
- o 2,500 acres of granitic soils on slopes of 30 to 70 percent.

About 48,000 acres of these **sensitive** watershed lands are capable of producing commercial timber.

Cumulative Watershed Effects

The current Forestwide disturbance value as calculated by 'equivalent road area' (ERA) is currently about 2.2 percent of the Forest. This was determined using the Regional methodology described in draft Chapter 20 of FSH 2509 22, titled 'Cumulative Off-Site Watershed Effects Analysis.' Cumulative impacts for specific watersheds are presently being analyzed during project-level planning.

Several major National Forest System watersheds contain substantial acreages of private land in an alternate ownership pattern which greatly influences the Forest Service's ability to meet multiresource objectives while meeting water quality maintenance objectives. These watersheds include the Middle Yuba (44 percent private), South Yuba (51 percent private), North Fork of the American (35 percent private), Rubicon (37 percent private), and Truckee River (61 percent private) Portions of all the other National Forest System watersheds have an intermingled ownership pattern with similar problems in meeting water quality objectives.

Declining Watershed Conditions

The TNF has **about** 14,000 acres of land in a declining watershed **condition**. About 2,000 to 3,000 acres of this total can probably be physically restored by artificial revegetation and mechanical restoration measures. Current RPA direction is to restore an average of 270 acres per year of deteriorated watersheds by 1990, and an average of 310 acres per year by 2030. These acreage targets are impractical and unattainable because they reflect a total watershed restoration program over time that would far exceed the backlog of physically treatable and restorable acres on the TNF. Of the 2,000 to 3,000 treatable acres, about 700 acres are abandoned hydraulic diggings. These are located mainly below 5,000 feet in elevation along the **west** side of the Forest. An additional 400 acres of treatable lands include roads, which are a local erosion problem on all parts of the Forest, and channel and meadow erosion that mostly occurs in the Sierra Crest zone and on the east side of the Forest. The remaining acreage of treatable land are located in the Indian and Cap Fire areas on the Downieville District. Treatment on the remaining 11,000 to 12,000 acres in a declining condition is limited because of excessive cost, poor access, a lack of technology, or the acreage is judged to best recover by **just** limning intensive resource management practices. This may involve **restricting** or severely limiting timber harvesting and livestock grazing from certain areas.

A priority listing of the **TNF's** ten major problem areas includes:

- | | |
|-------------------------|--|
| 1. Indian and Cap Burns | 6. Woolsey Flat Diggings |
| 2. meadow erosion | 7. Eureka Diggings |
| 3. roads | 8. Indian Hill Diggings |
| 4. Oregon Creek slides | 9. Sailor Flat Diggings |
| 5. Moores Flat Diggings | 10. LMIe Truckee River-Sierra Valley Diversion |

The expected watershed restoration cost for the 2,000 to 3,000 treatable acres is unknown but would probably approach several million dollars.

The 12,000-acre Carman Valley Watershed, located on the northern edge of the Forest near Sierra Valley, is currently in poor condition. Historic logging and overgrazing and recent fires have resulted in excessive channel cutting and **loss** of adjacent wetlands. This area is a continuing high priority for treatment.

Groundwater

Two significant groundwater basins lie within or adjacent to the Forest boundary: Sierra Valley and Martis Valley. Usable storage capacity for the Martis Valley basin has been estimated at 50,000 acre-feet. The usable storage capacity for Sierra Valley is unknown. The groundwater aquifers in these basins almost entirely underlie private land. Some of the groundwater recharge zone and much of the surrounding upland areas are National Forest System land. Most groundwater used on the TNF comes from wells or springs that tap small isolated underground reservoirs in fractured bedrock or porous rock and soil units. Groundwater supply varies depending on local geological characteristics. Little can be done to alter the quantity in most basins. Geologic or geotechnical studies aid in locating the most likely sources for development. The TNF Geologic Resource Inventory (in progress) will specifically address where groundwater basins are located and make recommendations for potential future management of the groundwater resource.

Water Developments

Numerous impoundments exist on the Forest, ranging in capacity from under 100 to hundreds of thousands of acre-feet. These occur throughout the TNF. Some of the larger ones include Bullards Bar Reservoir, at the west side of the Forest; Stampede and Boca Reservoirs on the east side; French Meadows Reservoir on the south border; and Jackson Meadow, Bowman Lake, Lake Spaulding, and Fordyce Lake in the north-central part of the Forest. These were built primarily for downstream irrigation and municipal needs, with power development also an important use. Many of the older, smaller impoundments were originally built for mining purposes, but are now serving other uses. Since the operation of these impoundments is mainly for downstream uses, there are occasional conflicts with National Forest System needs. These conflicts usually negatively affect downstream fisheries, such as in the lower South Yuba River and in the Little Truckee River between Stampede and Boca Reservoirs. Also, lakes are occasionally below desired levels during the summer high recreation use period; this has affected recreation use at Stampede Reservoir.

Recently there have been many Federal Energy Regulatory Commission and associated State water right applications for small hydroelectric developments on TNF lands. These applications have occurred primarily in the Yuba and American River drainages. The primary instream beneficial use, fishery needs, may be already impacted because most applications routinely request more water than naturally flows during the proposed periods of use. Current Forest policy is to protest water rights applications until instream flow needs are determined and agreed to. This is normally done in conjunction with similar California Department of Fish and Game (CDF&G) actions. The TNF and CDF&G routinely require small hydro proponents to conduct the Instream Flow Group Incremental Methodology, or similar studies, to establish instream flow requirements for affected streams.

As with small hydro proposals, the TNF responds to proposed water storage developments on a case-by-case basis. Mitigation measures are incorporated into proposals to protect National Forest interests, including instream fishery needs, wildlife, and recreation uses. During relicensing procedures, the Forest may require changes in release schedules if previous agreements proved inadequate.

WILD AND SCENIC RIVERS

In November 1978, Congress designated the North Fork of the American River as a Wild River from a point 0.3 mile above Heath Springs downstream to a point approximately 1,000 feet upstream of the Colfax-Iowa Hill Bndge, including the Gold Run Addition Area, a total of 38.3 miles. Subsequently, the North Fork American Wild River Management and Development Plan, October 3, 1979, was prepared for guiding its management and development.

The Forest Service and BLM presently share the responsibility for administering the North Fork American Wild River. The State of California retains management responsibility for its land (123 acres) within the designated Wild River boundary. Management of this land is coordinated through a Memorandum of Agreement.

In **1972**, the State of California designated the North Fork of the American River as a component in its Wild and Scenic Rivers Systems. This designation is far broader than the current Federal classification. It more or less extends to the top of the canyon, rather than one-quarter mile on either side of the river. The management objective for the State is generally compatible with the National Forest management objective, which is to maintain the river's natural, freeflowing condition. The plan has not been approved by California as of May, 1989.

Portions of the Middle Yuba River and South Yuba River were included in the Heritage Conservation and Recreation Service (now a part of the National Park Service) Nationwide Rivers Inventory completed in 1981. An assessment of the eligibility of these rivers was completed during the Forest planning process. This eligibility assessment concluded that scenic and recreational values in the inventoried portions of the Middle Yuba River and the South Yuba River are 'outstandingly remarkable'; therefore, they are eligible for inclusion in the Wild and Scenic River System. (Refer to Appendix E.) These river segments are not included in any of the alternatives considered in detail because suitability was not analyzed.

The Truckee River will be studied for eligibility and suitability in coordination with the Lake Tahoe Basin Management Unit in the next three years. The Truckee River is not included in any alternatives. The upper Rubicon River above Hell Hole Reservoir will be studied for eligibility in coordination with the Eldorado National Forest.

Based on public response to the Draft EIS and Draft Plan, the Middle Fork American River, North Fork of the Middle Fork American River, Lavezzola Creek, and Canyon Creek were identified and evaluated for outstandingly remarkable values to determine if they were eligible for Wild and Scenic River status. No outstandingly remarkable values were identified for these four rivers; therefore they are not eligible for inclusion in the Wild and Scenic River System and are not included in any of the alternative considered in detail. Refer to Appendix E for more detail.

WILDERNESS AND ROADLESS AREAS

The following eleven roadless areas were identified in the roadless area reviews: Granite Chief, East Yuba, West Yuba, North Fork American River, Middle Yuba, Castle Peak, Bald Mountain, North Fork of Middle Fork American River, Duncan Canyon, Grouse Lakes, and Lakes Basin (the majority of which is on the Plumas National Forest). The first four areas were identified for further study in Rare II and were managed to protect their wilderness character; the remaining areas were managed for various objectives according to existing multiple use and land use planning direction.

The California Wilderness Act of **1984** designated **18,705** acres of the Granite Chief RARE II Area as Wilderness and allowed release of the remaining roadless areas for nonwilderness uses in this round of planning. Nonwilderness use includes a wide range of management options from roading and logging an area to maintaining the area in a semi-primitive nonmotorized management condition.

The Granite Chief Wilderness has a varied, highly scenic landscape of forest, meadows, and glacially exposed granite rock. The Wilderness is located adjacent to the western watershed boundary of Lake Tahoe and includes Five Lakes Creek and the headwaters of the North Fork and Middle Fork of the American River. The major attractions of this area are its high, rugged granite cliffs and broad, glaciated valleys. Portions of a State game refuge extend into the area, and the abundance of game and nongame animals attracts large numbers of visitors. A Granite Chief Wilderness implementation plan will be prepared within two years after approval of the TNF Final EIS.

Granite Chief Wilderness is the only wilderness area on the TNF. The closest wilderness area is Desolation Wilderness on the Eldorado National Forest, approximately six air miles due south. To the north, Bucks Lake Wilderness on the Plumas National Forest is the closest wilderness. Wilderness supply is very limited on the TNF as evidenced by the ROS inventory that indicates that there are no acres available that can provide a primitive recreation experience as defined by ROS criteria. Recreation supply and demand for wilderness and primitive recreation experiences are discussed under Recreation ROS classes in Chapters 3 and 4. In a broader sense the demand for wilderness has been and is continuing to be expressed by Congress as Wilderness Bills are passed, such as the California Wilderness Act of **1984**.

WILDLIFE

Current Management Direction

The National Forest Management Act. The principal source of National direction for management of wildlife resources on National Forest System lands is NFMA (Public Law 94-588, 1976) and its associated regulations (36 CFR 219.19). The NFMA directs the Forest Service to include coordination of wildlife resources when developing comprehensive multiple use plans for National Forests (Sec. 6 (e)(1)). The Act also directs that diversity of plants and animals will be provided as consistent with land capability and multiple use objectives (Sec.6 (g)(3)(B)).

The NFMA regulations direct Forests to 'maintain viable populations of existing native and desired non-native vertebrates in the planning area' (Sec 219 19) Section 219.19 also defines a viable population as 'one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence.' The Section also directs that Forest Plans and alternatives will identify 'Management Indicator Species' (MIS), and fish and wildlife resource planning will include the following elements.

1. MIS will be used to evaluate the effects of management on fish and wildlife resources, and species selected shall include where appropriate:
 - a. Endangered and threatened plant and animal species identified on State and Federal lists.
 - b. Forest Service sensitive species.
 - c. Species with special habitat needs that may be influenced significantly by planned management programs.
 - d. Species that are commonly hunted, fished or trapped
 - e. Non-game species of special interest.
2. Biologists from State fish and wildlife agencies as well as other Federal agencies shall be consulted to coordinate planning for fish and wildlife.
3. Population trends of the MIS will be monitored and relationships to habitat changes determined. The monitoring will be done in cooperation with State fish and wildlife agencies to the extent practical.
4. Critical habitats for threatened and endangered species shall be identified and protected.

Section 219.27 of the NFMA regulations identifies management requirements which include maintenance of viable populations of native vertebrates and appropriate habitat for MIS (a)(4); protection of critical habitats for threatened and endangered species (a)(8); revegetation of non-system roads within 10 years (a)(11); designing timber harvest strategies that are consistent with the protection of fish and wildlife habitats and other resources (c)(6); protection of riparian areas (e); and preservation and enhancement of plant and animal diversity (g).

Regional Guide Direction. The Pacific Southwest Region of the Forest Service has complimented National direction for preparation of Forest land management plans by issuing the Regional Planning Guide (LMP Direction, 1984). This document specifies protection of critical habitats and management for sensitive, threatened, and endangered species. It also specifies standards for the management of viable populations. The standards relating to specific wildlife species are discussed in the following sections.

Present Resource Status

The wildlife resources on the TNF reflect the diversity of local habitats and life zones. The Forest is comprised of two distinct management zones, the eastern and western slopes. Each slope has distinct combinations of vegetation types and animal assemblages.

The Forest is *inhabited* by an estimated **366 wildlife** species, including **258 birds**, 82 mammals, **17 reptiles**, and **9 amphibians**. The Wildlife Habitat Relationship (WHR) database indicates that most Forest species are widespread and do not require individual management attention. However, some individual species have been given special status as described below.

Management indicator Species

As directed by **36 CFR 219.19 (1)**, the Forest has identified an array of management indicator species to evaluate the effects of various management alternatives. The MIS list and a status summary for each is presented in Table 3.31.

TABLE 3.31 - SUPPLY AND DEMAND FOR THE WILDLIFE MANAGEMENT INDICATOR SPECIES ON

SPECIES	SPECIES STATUS.	POPULATION STATUS	POPULATION TREND	INTEREST/ DEMAND	CAPABILITY TO MEET DEMAND
Bald Eagle	FE	20-25	unknown	high	good
Peregrine Falcon	FE	unknown	unknown	high	fair
Spotted Owl	FSS	110 pairs	unknown	high	good
Great Gray Owl	FSS	unknown	unknown	mod	poor
Goshawk	FSS	unknown	unknown	mod/high	good
Willow Flycatcher	FSS	unknown	unknown	mod/high	fair
Pine Marten	FSS	unknown	unknown	mod	fair
Pacific Fisher	FSS	unknown	declining	mod	unknown
Sierra Nev Red Fox	FSS	unknown	unknown	mod/low	unknown
Deer	HA	10-15,000	declining	high	good
Black Bear	HA	200-250	stable	mod	good
Gray Squirrel	HA	unknown	unknown	mod.	good
Mountain Quail	HA	unknown	unknown	mod	good
Wild Turkey	HA	unknown	unknown	mod/low	unknown
Band-tailed Pigeon	HA	unknown	unknown	low	good
Blue Grouse	HA	unknown	unknown	low	good

- * FE - Federally Endangered
- HA - Harvest
- FSS - Forest Service Sensitive

Federal Threatened and Endangered Species. Federally-listed threatened and endangered (T&E) species receive special management attention on the Forest as prescribed by the Endangered Species Act (1973, as amended). The **peregrine falcon** and **bald eagle** are endangered species that have been observed on the Forest. No threatened wildlife species are known to occur locally. The Forest has consulted with the U. S. Fish and Wildlife Service regarding this Forest Plan. The Service prefers not to consult in detail on forest plans but consultation regularly occurs when projects that could affect peregrine falcons or bald eagles are planned.

To compliment the recovery plan for the peregrine falcon, the Regional Planning Guide establishes a target of three pairs for the TNF. The Forest completed peregrine cross-fostering projects in **1986, 1987, and 1988**. Cross-fostering projects yielded fledgling falcons each year. The present status of fledgling falcons is uncertain.

The Forest has a wintering population of bald eagles that is believed to be between **15 and 25** individuals. In addbon, a breeding pair was documented adjacent to Stampede Reservoir in **1986**. The species recovery plan specifies a target of five breeding pairs for the Forest. Accordingly, the Forest has implemented habitat improvement projects at Stampede, Boca, and Bullards Bar reservoirs to improve breeding habitat conditions for bald eagles.

Forest Service Sensitive Species. Sensitive species also receive special management attention on the Forest as prescribed by the Forest Service Manual (Section 2670). The goal of habitat management for sensitive species is to prevent these animals from becoming candidates for threatened or endangered status.

Sensitive species that occur on the Forest are the spotted owl, great gray owl, willow flycatcher, goshawk, pacific fisher, pine marten, and Sierra Nevada red fox.

Spotted owls are distributed throughout forested areas on the western slope of the Forest. The Forest believes that about **110** pairs of spotted owls exist in westside habitats. An adequate survey has not been completed in eastside habitats. However, eastside siting records are few and the species is not believed to be present in large numbers there. The Regional Planning Guide establishes habitat management requirements for spotted owls. The document offers direction for organizing spotted owl habitat areas (SOHA's) and minimum specifications for distributing the SOHA's across the species range. The minimum spacing requirements yields a network of **33** SOHA's for the TNF. The Regional Guide also directs that at least 1,000 acres of suitable owl habitat will be provided in each SOHA over time. Additional direction for defining and organizing suitable habitat is given on pages **4-15** through **4-19** in the Regional Guide.

Comprehensive surveys for great gray owls have not been conducted on the Forest. Accordingly, little is known about the local status of this species. Siting records suggest that great gray owls inhabit several areas on the eastside and at least one area on the westside of the Forest. At least two additional locations offer suitable habitat conditions.

A statewide survey was recently conducted by the California Department of Fish and Game to locate important breeding habitat for the willow flycatcher (Sanders and Flett, **1988**). Eastside riparian areas of the TNF contain **39** of the **72** singing males or pairs of willow flycatchers located during the survey. Willow flycatchers prefer relatively large wet meadows adjacent to large streams. Most nest sites contain tall clumps of willows separated by openings. This species typically nests in the lower **1/3** of willow assemblages where heavy livestock grazing often occurs. The effects of grazing on willow flycatcher reproduction are not completely understood. However, adverse impacts have been suggested for other locations in the Sierra Nevada (Serena **1982**, and Valentine, in preparation).

The goshawk prefers mature forest stands and is believed to be common and widespread on the east and west sides of the Forest. A comprehensive survey for this species has not been completed, but sightings have been recorded for many areas of the Forest. The Regional Guide specifies that Forests will manage for at least two breeding territories per township. Each territory must have at least 50 acres of suitable (closed canopy) forest habitat.

California Department of Fish and Game and Forest Service sighting records indicate that the pacific fisher populations appear to be small and declining in the Sierra Nevada. The present population size on the TNF is unknown. No research has been conducted on the species in the Sierra Nevada, and habitat relationships data for the Forest are presently lacking. In northern California, the home ranges of fisher reproductive units (one male and two females) average about **9,000** acres (Slader Buck, personal communication). Slightly larger home range sizes have been reported for several other North American study areas. Home range size can be highly variable in response to habitat quality, season, and other factors.

On the TNF, suitable and optimum fisher habitat is regarded as conifer and hardwood-conifer forests with dense canopy closure and multi-storied structure. Suitable and optimum habitats provide relatively high densities of snags and down logs for feeding, denning, and resting. Preferred habitats include meadows or riparian corridors and may extend well into upland areas. The animals use saddles with at least 50 percent crown closure as travelways between drainages with suitable habitat.

Pine marten populations appear to be higher and more stable than fishers in the Sierra Nevada. However, current population estimates are not available. Four pine marten research projects have been completed in the central Sierra Nevada (Simon **1980**, Spencer **1981**, Hargis **1982**, and Barrett and Martin **1987**). These researchers conclude that pine marten reproductive unit home ranges average about **2,000** acres. Habitat use is affected by the sex of the animal, season, habitat quality, prey availability, and other factors.

Suitable and optimum pine marten habitat is similar to the conditions preferred by fishers. Martens prefer multi-storied conifer forests with moderate to dense canopy closure. Suitable and optimum habitats provide **2** to **3** large snags or stumps and **10** to **20** large logs per acre. Preferred habitats are adjacent to meadows or riparian corridors and may extend **1/4** to **1/2** mile into upland areas. Suitable marten habitats may provide

scattered openings that measure 2 acres or smaller. Pine martens also need travelways comprised of closed canopy forests to move between areas with preferred habitat conditions.

The Forest database indicates that there are currently 111,212 acres of suitable and optimum fisher and pine marten habitat in seral stages 4B and 4C. A smaller but undetermined number of suitable acres also exists in other strata. The actual acreage of potentially suitable habitat in other strata is not known because of insufficient information in the existing database. The 'checkerboard' land ownership pattern and high degree of fragmented habitats are believed to have significantly reduced the amount of occupied habitat on the Forest. The amount of occupied habitat is presently unknown, but a preliminary assessment indicates that 20 to 40 percent and 40 to 60 percent of the suitable acreage may be occupied by fishers and pine martens respectively.

The **Sierra Nevada red fox** is rare and appears to be declining in the Sierra Nevada (Shempf and White 1977). The present population on the TNF is unknown and no research has been conducted on this species in the Sierra Nevada. The animals prefer mature coniferous forest habitats near meadows (Verner and Boss 1980). Forest Service and California Department of Fish and Game biologists believe that habitat managed for pine marten and fisher provide suitable conditions for the Sierra Nevada red fox.

Harvest Species. Harvest species are those animals traditionally hunted or trapped. Commonly hunted species that inhabit the TNF include: deer, bear, gray squirrel, mountain quail, blue grouse, turkeys, band-tailed pigeons, and waterfowl. Other furbearing mammals are trapped and include mink, raccoon, bobcat, beaver, coyote, muskrat, badger, and gray fox.

Deer are the most commonly hunted mammal on the Forest. They prefer a mix of forest succession stages. Like many other areas in the west, deer herds on the westside of the Forest have declined during the past 15 to 20 years. Low fawn survival is suspected as a major reason for the decline, but the actual cause has not been determined. Several possibilities such as changes in plant succession, reduced forage quality, livestock competition, road construction, and predation have been postulated. Deer are believed to be increasing on the eastside of the forest and may be approaching the target numbers identified in the management plan for the Loyalton-Truckee herd.

Historically, the TNF has provided approximately 2 to 3 percent of the Statewide deer harvest according to State harvest records. Deer on the Forest have been organized into the Downieville, Nevada City, Blue Canyon, and Loyalton-Truckee herds. The TNF and the California Department of Fish and Game have cooperated in the preparation and implementation of management plans for each herd.

Deer range on the Forest is divided into two seasonally important segments: summer range and winter range. The former is mostly above 5,000 feet and is primarily associated with moist meadows, brushfields, seeps and springs, and riparian areas. Winter range is located primarily below 5,000 feet and is probably limiting the eastside and westside herds. Limiting factors on winter ranges are thought to be localized reductions in forage quality and habitat loss from development of private lands. There are an estimated 94,085 acres of deer winter range on the Forest. Of this total 33,780 acres are believed to be key winter range. Other important areas include migration corridors between winter range and summer use areas and the holding areas along the migration corridors. Winter range, fawning areas, holding areas, and migration corridors are shown on the fish and wildlife map in the planning files. Many areas of the forest offer opportunities for improving deer habitat conditions through careful planning of timber management projects, road closures, and other measures.

Black bear occur throughout the Forest. They prefer mature forests with brushfields and meadows. Uprooted trees, windfalls, and hollow logs are used for den sites. The best habitat is on the western slope. Local populations are well distributed and are believed to be stable or increasing. The highest bear densities are in the northwestern portion of the Forest. Historically, bear kills on the TNF have made up 2 to 3 percent of the State harvest according to State harvest records.

Gray squirrels are widespread over the lower hardwood and mixed conifer-hardwood portions of the Forest. Hunting appears to be relatively light, but harvest levels have not been quantified by the California Department of Fish and Game. Squirrel numbers are strongly influenced by the amount and distribution of mast-bearing hardwoods.

Upland game birds are a source of recreation on the Forest, but hunting is relatively light. Habitat on the TNF is excellent for mountain quail and blue grouse. Mountain quail prefer timber stands with extensive shrub cover and low canopy closure. Blue grouse prefer open canopied stands of mixed conifer and fir with interspersed brush-covered openings. Both species tend to use wet meadows and riparian zones extensively.

The Forest has a few wild turkeys, but not enough to accommodate intensive hunting. The Forest does provide areas with suitable turkey habitat. The species prefers wooded areas with a hardwood component and scattered grassy openings in rugged terrain. Turkey populations could be expanded on the Forest through a stocking program in cooperation with the California Department of Fish and Game.

Band-tailed pigeons occur on the Forest but little is known about current population levels. They prefer open canopied, mature mixed conifer-hardwood forests. Hunting pressure is generally light, but there are some areas of concentrated hunting use and some opportunities for habitat improvement.

Waterfowl use most local lakes and large streams for resting and feeding during migration. Ducks are more widespread than geese and tend to use small wet meadows and lakes for nesting. Geese use the large wet meadows and lakes, particularly on the Truckee and Sierraville Ranger Districts, for nesting. Projects to improve waterfowl habitat have been initiated on the Sierraville District. Additional opportunities for habitat improvement exist at several locations on the Sierraville and Truckee Ranger Districts.

Emphasis Species

For the draft Forest Plan, 15 management indicator species were selected to compare the effects of plan alternatives on wildlife. These species were also used as the focus for wildlife habitat management.

The TNF received comments on the draft Forest Plan from the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and many others. The comments included recommendations to broaden the list of animals used for habitat management. The Forest has added several species and species groups in response to these recommendations. The effects of Forest Plan alternatives are thought to be adequately described with the original 15 MIS. Therefore, the new species were included as 'emphasis species' to avoid an unnecessarily lengthy wildlife analysis and discussion in this EIS. The emphasis species are described in Appendix D of the Forest Plan.

Species With Special Status The Forest recognizes two additional groups of species as having special status. These groups are: 1) State-listed threatened and endangered species, and 2) animals listed as 'Species of Special Concern' by the California Department of Fish and Game. Some species in these groups are also identified on Federal T&E or Forest Service sensitive species lists. These animals are addressed in the preceding sections.

State Threatened and Endangered Species. Two species that are identified on the the State T&E species list are not recognized on Federal lists. The species are the wolverine and the Swainson's hawk.

Wolverines are believed to be rare on the TNF. They prefer forests having large trees with medium to dense canopy cover adjacent to alpine meadows and rocky areas with caves. Wolverines seek areas with low human activity and need logs or snags for den sites. Sightings may be increasing and may reflect an increase in wolverines in the Sierra Nevada. However, reliable census information is presently lacking.

Swainson's hawks were once common breeding birds along the eastern slope of the Sierra Nevada and the Sacramento/San Joaquin Valleys. Although reasons for the decline are presently unclear, conversion of grassland habitats for farming and other uses are believed to be a major factor. Present opportunities for increasing Forestwide populations of Swainson's hawk are thought to be very limited. Accordingly, the draft Forest Plan did not identify desired habitat management practices for Swainson's hawks.

State Species of Special Concern State species of special concern that could inhabit the TNF include the osprey, sharp-shinned hawk, Sierra Nevada snowshoe hare, long-eared owl, merlin, purple martin, yellow warbler, yellow-breasted chat, prairie falcon, and golden eagle.

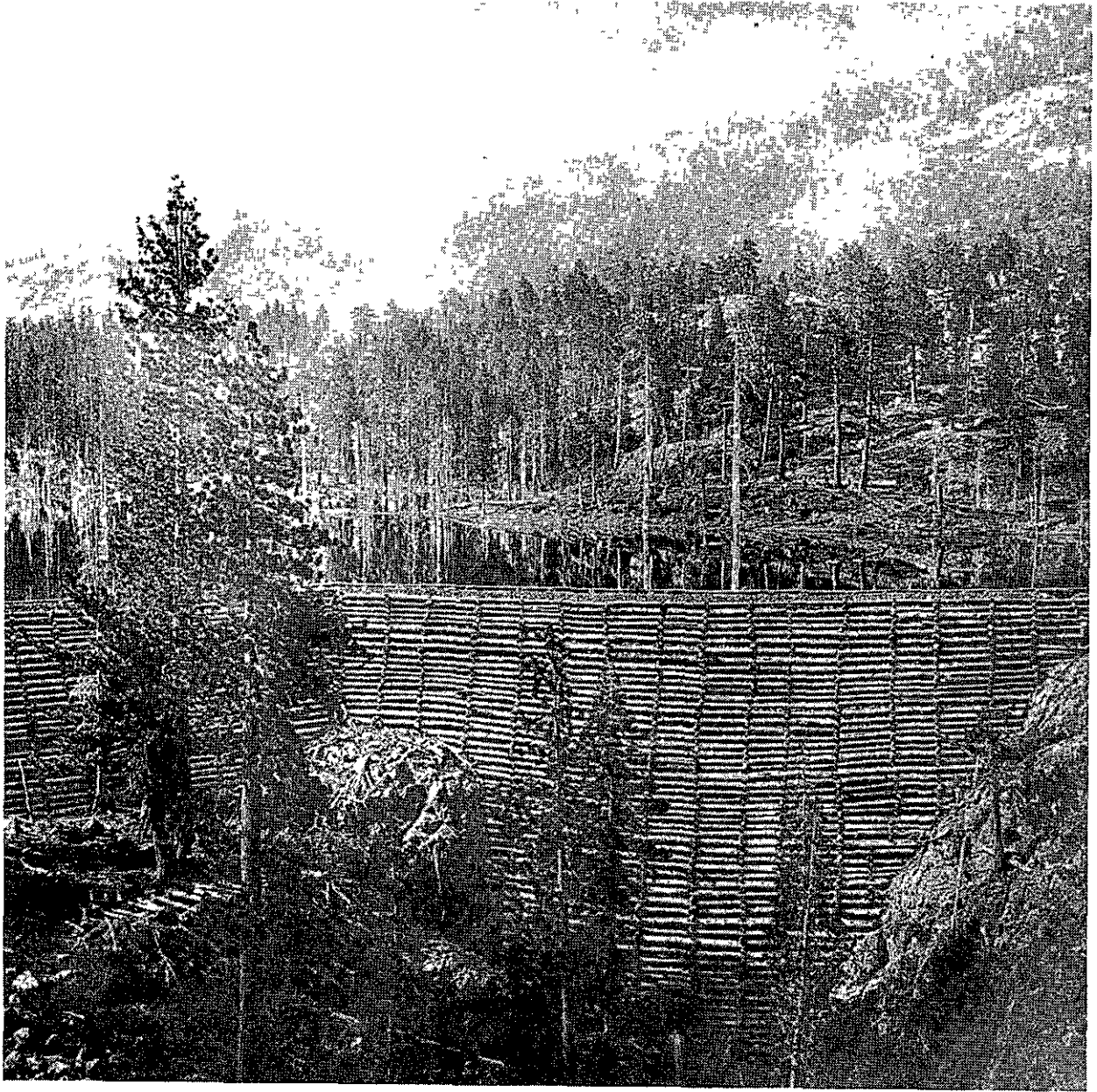
Ospreys prefer large reservoirs and nest in snags. Little is known about the number of ospreys on the Forest, but numerous sightings have been reported. One nest has been discovered on the Forest and several platforms have been constructed near local reservoirs to encourage nesting activity. There is local interest to continue providing nest platforms and habitat for osprey

The current status of the sharp-shinned hawk is unknown for the TNF. The species prefers forest stands with high tree densities, closed canopies, and sub-mature age classes. Accordingly, close coordination between timber and wildlife management will be needed to maintain suitable habitat for sharp-shinned hawks.

The present status of the Sierra Nevada snowshoe hare is uncertain. This species inhabits boreal regions of the Sierra. Reliable population projections are lacking for the TNF or elsewhere. Local interest in this species is extremely low.

Little is known about Forest populations of long-eared owls, merlins, purple martins, yellow warblers, yellow-breasted chats, prairiefalcons, and golden eagles. Prairiefalcons and golden eagles are presently regarded as low priorities for habitat management because public interest is small and opportunities for management are few. The remaining State species of special concern do not currently receive management attention because each is believed to be very rare or absent from the TNF and opportunities for increasing populations are limited.

Species Associated With Special Habitats. Management of the TNF has the potential for substantially changing several important *wildlife* habitats over time. These habitats *are*: riparian, hardwoods, old-growth, meadows, and wetlands. Continued harvesting of timber would reduce the amount of old-growth forest and could degrade the quality of hardwood and riparian habitats for associated species. Livestock grazing, road management, and recreation activity have the potential for substantially changing habitat conditions in riparian and meadow habitats. *In addition*, an *opportunity* exists to enhance habitat quality for waterfowl and other wetland species through direct habitat improvement projects. Wildlife managers are concerned about the future trend in species that are closely associated with habitats that could change substantially over time.



English Dam—broke in 1883

CHAPTER 4

THE ENVIRONMENTAL CONSEQUENCES

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CHAPTER 4 THE ENVIRONMENTAL CONSEQUENCES

A. INTRODUCTION

This chapter discusses the environmental consequences (commonly referred to as impacts) of implementing the proposed action and alternatives, and forms the scientific and analytic basis for the comparisons of alternatives described in Chapter 2. The resource output levels by alternative are displayed and the environmental consequences that result are described. The environmental consequences for all alternatives assume the implementation of Forestwide standards and guidelines (Chapter V of the Forest Plan). These standards and guidelines provide means to mitigate adverse impacts to ensure that the long-term productivity of the land is not impaired.

This chapter is divided into the following seven sections:

- (B) Direct, Indirect, and Cumulative Environmental Consequences.
- (C) Means to Mitigate Adverse Impacts.
- (D) Adverse Environmental Effects Which Cannot be Avoided.
- (E) Relationship Between Short-Term Uses and Long-Term Productivity.
- (F) Irreversible and Irretrevable Commitments of Resources.
- (G) Possible Conflicts with Federal, Regional, State, and Local Land Use Plans
- (H) Energy Requirements and Conselvation Potential.

The information in Section B is grouped by the same resource headings used in Chapter 3 - The Affected Environment. Chapter 3 describes the TNF as it now exists; this current condition provides the basis for understanding the environmental consequences. In Sections D, E, F, and G, the consequences discussed in Section B are summarized according to the type of impact. For example, adverse environmental effects that cannot be avoided with the implementation of any alternative are discussed in Section D. Because of the many specific effects upon many resources, 'indicators' are used to represent and display the overall effect of implementing an alternative on a resource.

Environmental consequences are described for the preferred and other alternatives as they relate to the existing situation. Analyses and detail on the method of estimating the effects of each alternative are included in the planning records.

B. DIRECT, INDIRECT, AND CUMULATIVE ENVIRONMENTAL CONSEQUENCES

ECONOMIC CONSEQUENCES

All dollar figures shown are constant 1982 dollars.

Present Net Value (PNV)

The effect of each alternative's management direction on PNV is described in Chapter 2, Section F, COMPARISON OF ALTERNATIVES - Constraint Analysis.

Income and Employment

Income and employment in the local economy is described in Chapter 3, Section C, THE ECONOMIC ENVIRONMENT.

The production of goods and services from the Tahoe National Forest affects the economy of the impact area by generating income and employment. Income represents the sum of wages, salaries, other labor income, and proprietors income in the local economy. These effects are measured by multipliers. An income multiplier, for example, means that the spending generated by each MBF of timber sold by the Tahoe National Forest creates \$204 of income in the local economy. This \$204 is not to be confused with the 'benefit' of timber used in present net value or benefit/cost calculations. These are **two** separate measures. Multipliers are not precise but are useful for displaying the relative differences between alternatives.

An input/output model for the TNF's zone of influence was used to develop the income and employment multipliers (see Tables 4.1 and 4.2, and Figures 4.1 and 4.2). Measurement is by dollars and worker years.

Income Multipliers

\$ 7.58 per recreation visitor day
\$ 7.66 per animal unit month of livestock grazing
\$204.00 per thousand board feet of timber
\$ 0.45 per dollar spent by TNF in administration

Timber. Most of the variation in income is because alternatives differ in their timber yields, this yield variation is compounded by timber's relatively higher income multiplier. Timber shows the largest range of variation of the outputs contributing to income. Ranking alternatives by total income or timber yield results in the same order: the CMD alternative is highest and the NMK alternative is lowest.

Recreation. In the first decade, income generated by developed recreation on the TNF would be the same for all alternatives because RVD production is limited by demand.

Range. Income generated by livestock grazing is the smallest contributor to total income. Range income is **less** than 1 percent of total income generated by all alternatives. Range income would be highest in the RPA alternative, which generates the highest range output in the first decade, because of the range conversion needed to meet the RPA range target. The CUR alternative also provides for a high range output.

TNF Administration. Forest administration generates income by procuring goods and services. This income would vary directly with the Forest budget. Ranking alternatives by this income element results in the same order (*i.e.*, the CMD alternative is highest and the NMK alternative is lowest) as the ranking by timber-related income because timber is the largest budget item.

When generating employment and income figures using multipliers, a straight proportionality exists between income, employment, and outputs and budget. In other words, the explanation of changes in income among alternatives discussed above also would account for variations in employment.

Employment Multipliers

.505 worker year per thousand recreation visitor days
.511 worker year per thousand animal unit months
.014 worker year per thousand board feet
.030 worker year per thousand dollars spent by TNF

Another type of employment is the number of employees or full-time equivalents (**FTEs**) needed by the TNF for administration. FTEs are not to be confused with the employment due to Forest administration determined by the multiplier. FTEs are government employees. Employment due to TNF administration is nongovernment employment.

Other measures of income include payments to counties from the 25-percent payments, return to the Department of the Treasury, timber-yield taxes, and Forest budget.

Twenty-five percent of the return to the Treasury is distributed to the five counties to finance roads and school budgets. The following components comprise the majority of receipts used to formulate the return to the Treasury and the '25-percent fund'

- o Value of timber harvested
- o Land use permits
- o Grazing fees
- o Recreation permits and user fees

Tables 4.3 and 4.4 and Figures 4.3 and 4.4 compare the alternatives considered in terms of yield tax and return to the Treasury that would be generated in the first decade

TABLE 4.1 - AVERAGE ANNUAL INCOME CREATED BY TNF ACTIVITIES FOR FIRST DECADE IN MILLIONS OF DOLLARS (UNDISCOUNTED) 1/

SOURCE	PRF	CUR	RPA	CMD	NMK	UNE
Recreation Use	39.4	39.4	39.4	39.4	39.4	39.4
Livestock Grazing	0.2	0.2	0.3	0.2	0.1	0.2
Timber Harvest	29.0	35.4	35.3	36.7	21.4	22.6
TNF Administration	3.7	3.7	4.8	4.1	3.8	3.9
TOTAL	72.3	78.7	79.8	80.4	64.7	66.1

1/ Using income multipliers

TABLE 4.2 - AVERAGE ANNUAL EMPLOYMENT CREATED BY TNF ACTIVITIES FOR FIRST DECADE IN PERSON YEARS 1/

SOURCE	PRF	CUR	RPA	CMD	NMK	UNE
Recreation Use	2,623	2,623	2,623	2,623	2,623	2,623
Livestock Grazing	11	11	18	11	5	11
Timber Harvest	1,992	2,426	2,422	2,521	1,468	1,551
TNF Administration (Non Forest Service)	636	603	729	732	666	639
TNF Administration (Forest Service FTE) 2/	413	392	474	476	433	415
TOTAL	5,675	6,057	6,205	6,363	5,195	5,239

Figure 4.1: First-Decade Average Annual Income

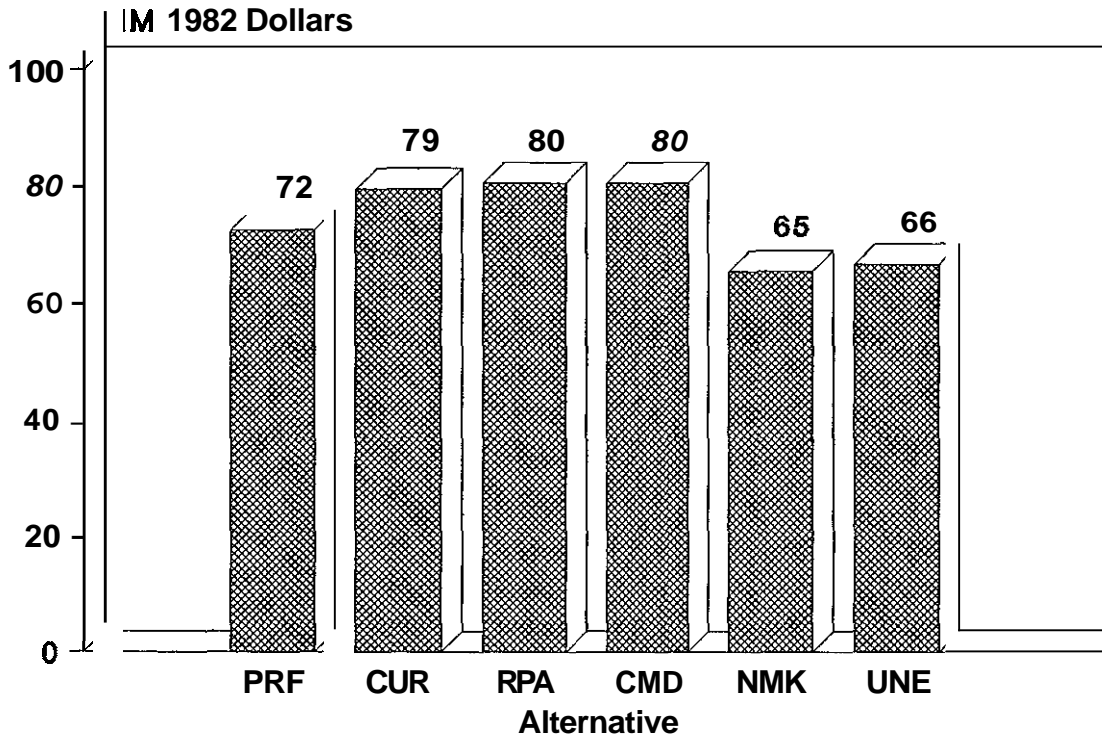


Figure 4.2: First-Decade Average Annual Induced Employment

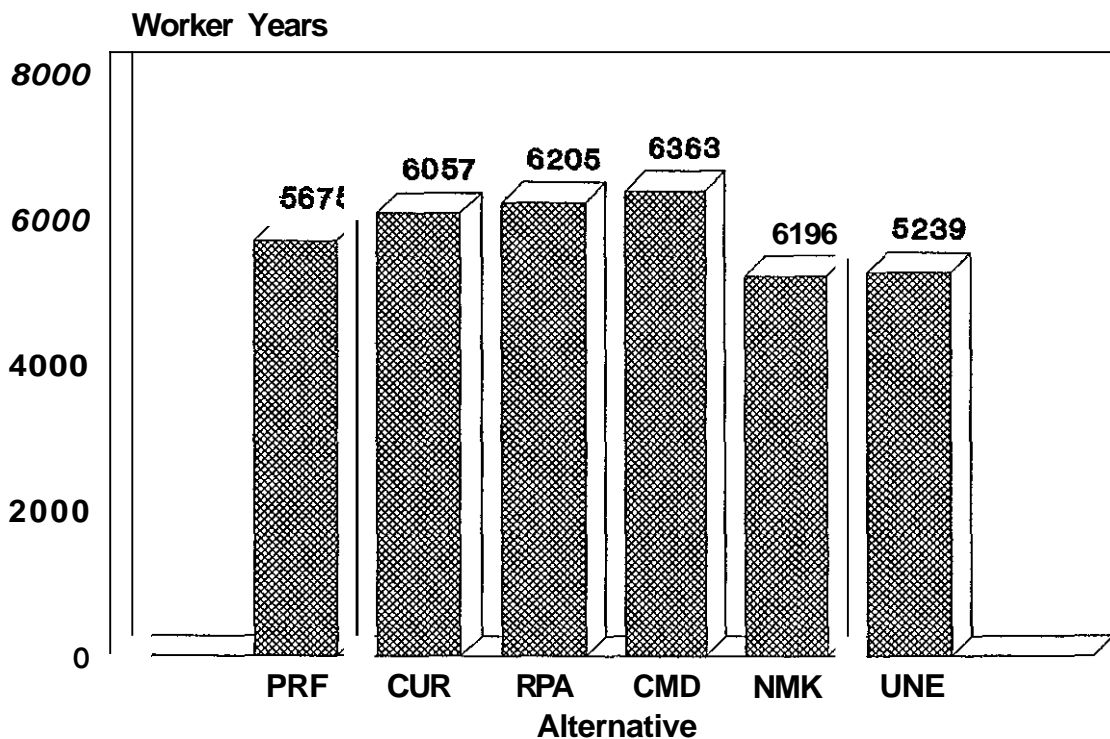


Figure 4.3: First-Decade Average Annual Return to the Treasury

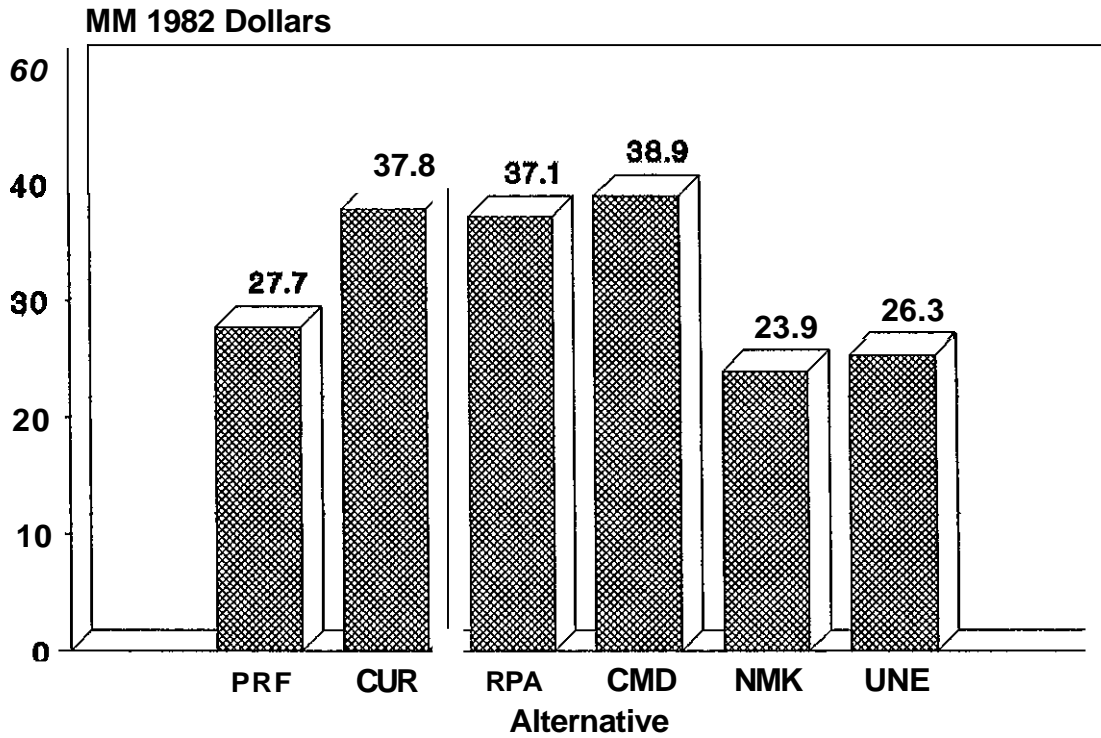


Figure 4.4: First-Decade Average Annual State Yield Tax Revenues

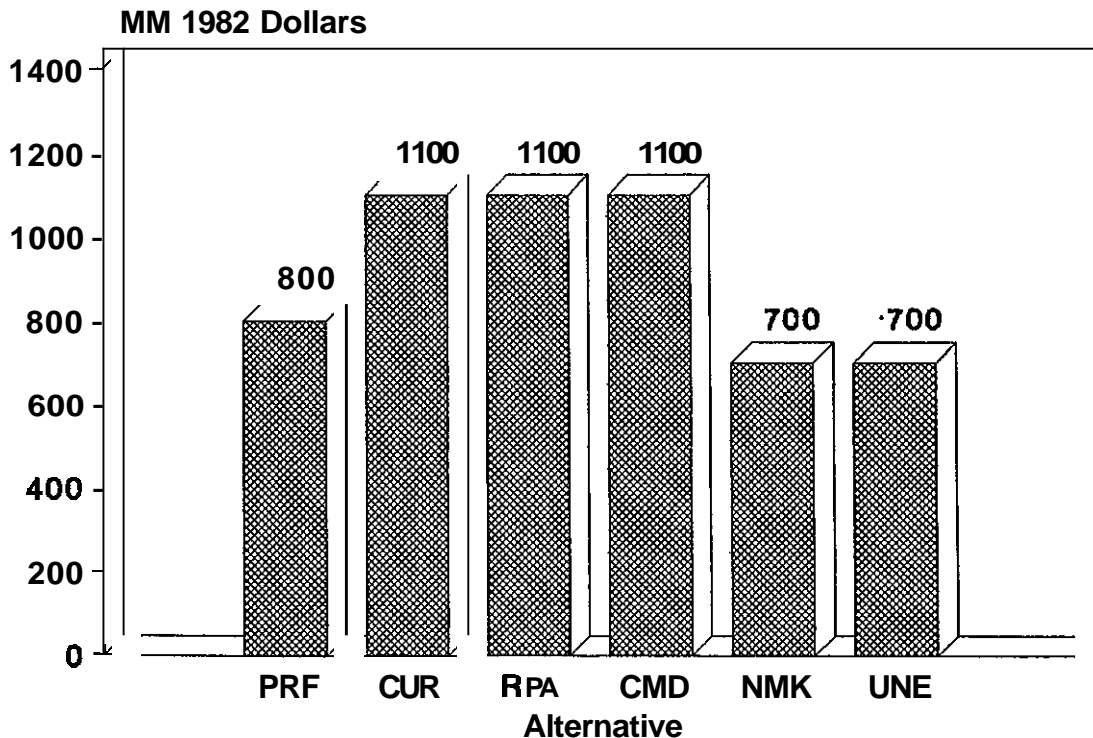


TABLE 4.3 • AVERAGE ANNUAL PAYMENTS TO COUNTIES FOR FIRST DECADE IN MILLIONS OF DOLLARS (UNDISCOUNTED) 1/

SOURCE	PRF	CUR	RPA	CMD	NMK	UNE
Total 25 Percent Payment 2/	69	95	93	97	60	63
Timber Yield Tax	08	11	11	11	07	07
TOTAL	77	106	104	108	66	74

TABLE 4.4 -AVERAGE ANNUAL FINANCIAL EFFECTS FOR FIRST DECADE IN MILLIONS OF DOLLARS (UNDISCOUNTED)

	PRF	CUR	RPA	CMD	NMK	UNE
Return to Treasury	277	376	371	369	239	253
Total Forest Budget 1/	212	201	230	244	222	213

SOCIAL CONSEQUENCES

Social and economic effects are closely related (Income and employment effects are discussed under ECONOMIC CONSEQUENCES in this chapter) Social effects are expressed through the evaluation of the following social variables (discussed in Chapter 3, Section D, THE SOCIAL ENVIRONMENT): lifestyles; attitudes, beliefs, and values; community stability and cohesion; population growth, and community services. The affected social groups include long-time residents, retirees, former urban residents, alternative lifestyle residents, second-home owners, regional recreationists, and Native Americans. Minority groups, per se, are not affected differently as special groups than they would be as a part of one of these social groups. The Tahoe National Forest is committed to equal treatment of all individuals and social groups. None of the alternatives considered for the Forest is expected to have discriminating effects.

These groups also include minorities, women, the disabled, the elderly, those for whom English is a second language, and those of different ethnic origins.

Social groups that may be more preservation-oriented include alternate lifestyle, former urban residents, second-home owners, and regional recreationists

The effect of a given alternative may be both beneficial and negative to Native Americans. For example, increased commodity production would benefit those Native Americans working in the timber industry; but, at the same time, it would increase the risk of loss or damage to Native American cultural resource sites.

Implementing the alternatives would have social consequences. When two or more groups within the Forest sphere of influence differ significantly in their expectations for Forest resource use and when the alternatives have different effects on the social groups, potential conflict exists. Generally, the smaller the range of alternative choices, the less conflict between social groups.

For example, alternatives which emphasize timber harvest, forage production and use, and developed recreation are most beneficial to certain long-time residents, although there are a large number of long-time residents who are equally concerned about environmental protection. On the other hand, alternatives which emphasize dispersed recreation and a natural environment are most acceptable to most new arrivals and most second-home owners. Regional recreationists are most likely to derive benefit from alternatives that protect natural values yet provide ample dispersed and developed recreation opportunities. Many regional recreationists, however, would prefer one class of recreation to another; e.g., expanded ski areas, on the one hand, or expanded semi-primitive nonmotorized recreation areas on the other. Conflicts can usually be resolved or reduced if adequate social information is available.

Source data for social and economic effects were obtained by literature review and personal interviews and are summarized in the **Socio-Economic** Overview for the Tahoe National Forest (see TNF planning records 1922.16a.7c). The data were collected for the impact area, i.e., the five counties within the boundary of the TNF: Nevada, Placer, Plumas, Sierra, and Yuba.

The Social groups are the focus of the discussion that follows. Summary tables of selected variables by social groups assess how each alternative is evaluated for the variables and groups. Following Tables 4.5, 4.6, 4.7, and 4.8 specific social consequences by alternative are evaluated. The growth variable is not displayed by social group because it is tied closely to community stability (refer to the footnote in Table 4.6).

Alternative PRF. This alternative retains a level of market outputs beneficial to the lifestyle, community stability, attitudes, beliefs, and values of people associated economically to natural resources such as longtime residents and Native Americans. The Granite Chief Wilderness, slight increases in fish and wildlife populations, and increases in various recreation opportunities, specifically developed recreation sites and expansion of ski areas, should generally meet the needs and expectations of retirees, former urban residents, alternative lifestyle residents, second-home owners, and regional recreationists for more recreation, open space, unmodified scenery, and solitude.

Community stability and cohesion in the Truckee area would be reduced by new sources of Forest economic growth (primarily the result of ski-area expansion), and some community services could be strained. In the other communities, there would be increased requirements from local government for law enforcement, solid waste disposal, sewage, roads, and drinking water services.

This alternative would not induce population growth, and limited changes in land use from timber to nontimber uses would occur.

Alternative CUR. No change from the existing situation, which is described in the Socio-Economic Overview and the AMS, would occur.

Current policy is generally supported by the lifestyles of most social groups because it provides the same level of timber production, fuelwood supplies, grazing, fire protection, and recreation opportunities as in the past decade.

Timber-related employment opportunities would be the same, but recreation lifestyles would be negatively affected because more people would use the same number of Forest Service recreation sites.

TABLE 4.5 - SUMMARY OF ALTERNATIVE EFFECTS ON SOCIAL GROUPS FOR THE LIFESTYLE VARIABLE

SOCIAL GROUP	PRF	CUR	RPA	CMD	NMK	UNE
Long-time Residents	GS	GS	GS	SS	LS	LS
Retirees	GS	GS	GS	GS	GS	GS
Former Urban Residents	GS	LS	LS	LS	GS	GS
Alternative Lifestyle Residents	GS	LS	LS	LS	SS	SS
Second-home Owners	GS	GS	GS	LS	GS	GS
Regional Recreationists	GS	GS	GS	GS	LS	GS
Native Americans	GS	GS	GS	GS	GS	GS

SOCIAL GROUP	PRF	CUR	RPA	CMD	NMK	UNE
Long-time Residents	LS	S	S	S	LS	LS
Retirees	S	S	S	S	LS	S
Former Urban Residents	S	LS	LS	LS	S	S
Alternative Lifestyle Residents	S	LS	LS	LS	S	S
Second-home Owners	S	LS	LS	LS	S	S
Regional Recreationists	N/A	N/A	N/A	N/A	N/A	N/A
Native Americans	S	S	S	S	S	S

Legend

LS - Alternative would be Less Stable and lessen the community's cohesiveness, i.e., polarization w/d the group

S - Alternative would create Stability and cohesiveness between the group and the community

N/A - Not Applicable to the group since it is not part of the community

Footnotes

1/ Communities are the most stable and cohesive w/d alternatives that produce little social impact change since generally the Forest Service outputs are not growth inducing. There would be considerable new economic growth, but it would be from sources other than the Forest Service with the exception of new ski area development. The alternatives which are more growth inducing would offer less community stability and cohesion.

TABLE 4.7 - SUMMARY OF ALTERNATIVE EFFECTS ON SOCIAL GROUPS FOR THE ATTITUDES, BELIEFS, AND VALUES VARIABLE

SOCIAL GROUP	PRF	CUR	RPA	CMD	NMK	UNE
Long-time Residents	GC	GC	GC	SC	LC	LC
Retirees	GC	LC	LC	LC	GC	GC
Former Urban Residents	LC	LC	LC	LC	SC	SC
Alternative Lifestyle Residents	LC	LC	GC	LC	SC	GC
Second-home Owners	GC	LC	GC	LC	SC	SC
Regional Recreationists	SC	GC	GC	GC	GC	SC
Native Americans	GC	GC	GC	LC	GC	GC

TABLE 4.8 - SUMMARY OF ALTERNATIVE EFFECTS ON SOCIAL GROUPS FOR THE COMMUNITY SERVICES VARIABLE

SOCIAL GROUP	PRF	CUR	RPA	CMD	NMK	UNE
Long-time Residents	S	F	F	F	N	N
Retirees	S	F	F	S	N	F
Former Urban Residents	S	N	N	N	S	F
Alternative Lifestyle Residents	S	N	N	N	F	F
Second-home Owners	F	S	N	N	F	F
Regional Recreationists	N	N	N	N	N	N
Native Americans	N	N	N	N	N	N

Expectations of long-time residents and others linked economically to natural resources would be met because of the stable harvest levels of Forest commodities. Expectations of social groups who use the Forest primarily for recreation (former urban residents, retirees, regional recreationists, and second-home owners) would not be met because limited recreation opportunities result in crowded facilities. Preservation groups, such as alternative lifestyle, former urban residents, second-home owners, and regional recreationists, would not be content with no semi-primitive nonmotorized recreation area designation. The same quantity of fuelwood would not adequately supplement residents' primary energy needs because the population of the five counties is expected to increase.

All social groups would benefit from community stability and cohesion because the Forest Service outputs would not induce growth. Considerable new economic growth would occur, but it would be from sources other than the Forest Service.

Alternative RPA. This alternative would benefit the lifestyle of those groups economically linked to the Forest (primarily long-time residents) slightly more than would Alternative CUR because of slightly higher market outputs of timber, livestock grazing, and developed recreation. This alternative would also benefit recreation-user groups' lifestyles, primarily regional recreationists, new arrivals, and second-home residents, by providing more recreation opportunities than currently exists.

The preservationist groups would benefit with the existing Granite Chief Wilderness designation. Expectations for use of the National Forest would be met to a certain extent for all social groups except the alternative lifestyle groups, and the former urban residents who desire the amenity resources.

This alternative would induce slight growth. Limited changes in land use would occur, from timber to nontimber uses. No loss of community stability and cohesion from the slight increase in growth of National Forest outputs would occur. Economic growth would occur, but from development in the private sector.

Alternative CMD. Except for a moderate increase in livestock grazing, this alternative would produce high market outputs very beneficial for the lifestyle stability of people linked economically to natural resources, such as long-time residents and specifically those related to the timber industry, and would add to their sense of self-sufficiency and feelings of certainty about the future. The slightly higher fish and wildlife outputs than currently exist would be somewhat beneficial to the lifestyles of regional recreationists and second-home owners.

Regional recreationists would have additional developed recreation opportunities, however, second-home owners, former urban residents, and some retirees may be dissatisfied with the environmental impacts associated with increased market outputs. Preservationists would be dissatisfied with this alternative because no semi-primitive nonmotorized areas are provided. Native Americans would be dissatisfied with the high risk to cultural resources associated with this alternative.

The outputs of this alternative would induce slight growth over the current situation, but no loss of community stability would be expected. Economic growth would occur, but would be primarily in the private sector as described in Alternative PRF.

Alternative NMK. Lower market outputs would be unacceptable to the lifestyle of the long-time resident group and other groups economically linked to the outputs. Higher dispersed recreation and certain fish and wildlife outputs would be beneficial to the lifestyles of the alternative lifestyle group and second-home owners. Consequently, this alternative might not meet the expectations of the long-time residents but would meet the expectation of many others. Preservationists and most second-home owners, however, would have their desires satisfied for more open space and solitude because this alternative would provide the most semi-primitive nonmotorized recreation areas. Less fuelwood would be available to meet self-sufficiency needs. Native Americans would benefit by the low risk to cultural resources associated with this alternative, but those working in the timber industry could be affected by the loss of jobs. Those groups that enjoy motorized recreation activities would not be favored by this alternative.

This alternative would not induce any growth, and there may be limited changes in land use from timber to nontimber uses. Limited loss of community stability and cohesion may occur from outmigration of timber workers, but most unemployment problems would be alleviated by other new local sources of economic growth such as tourism.

Alternative UNE. The effects of this alternative would be similar to that for Alternative NMK. The major difference is that this alternative would benefit the regional recreationists and the retirees more than the former urban residents, the second-home owners, and the alternate lifestyle groups. The lower market outputs would be unacceptable to the lifestyle of the long-time resident group and other groups economically linked to the outputs. Higher developed and motorized recreation opportunities than presented in Alternative NMK, and certain fish and wildlife outputs, would be beneficial to the lifestyles of regional recreationists and second-home owners. Consequently, this alternative might not meet the expectations of the long-time residents but would meet the expectation of many others. Native Americans would benefit by the low risk to cultural resources, but those working in the timber industry could be adversely affected by the reduction in timber supply.

As in Alternative NMK, this approach would induce no growth, but may result in some limited changes in land use from timber to nontimber uses. Limited loss of community stability and cohesion may occur from outmigration of timber workers, but most unemployment problems would be alleviated by other new local sources of economic growth such as tourism.

RESOURCE CONSEQUENCES

AIR QUALITY

None of the alternatives would result in long-term air quality effects. The short-term effects of dust from road use and smoke from prescribed fire would occur in all alternatives, with a direct relationship between the average annual tons of particulate matter created from prescribed fire and the amount of timber harvested; however, air quality would still meet State Air Resource Board standards.

Table 4.9 displays the short-term consequences of the average annual tons of particulate matter from prescribed fire (based on data published by the U.S. Environmental Protection Agency, "Impact of Forestry Burning Upon Air Quality-1978"). This publication states that burning of slash generates from 17 to 67 pounds of particulate matter per ton of slash and the average estimated slash burned per acre is 36 tons. The median of 32 pounds of particulate matter and the 36 tons per acre burned are used for the calculation of particulate matter.

TABLE 4.9 - AIR QUALITY BY ALTERNATIVE AVERAGE ANNUAL TONS OF PARTICULATE MATTER FROM PRESCRIBED BURNING FIRE *

DECADE	PRF	CUR	RPA	CMD	NMK	UNE
1	1,800	3,700	6,300	3,300	1,200	1,200
2	1,600	4,900	5,900	2,100	1,800	1,200
3	2,300	4,900	5,800	2,600	1,400	1,800
4	1,900	4,000	4,200	2,400	1,200	600
5	2,000	4,300	4,200	2,500	900	800

Alternatives CUR, RPA, and CMD would generate increases in particulate matter; however, these increases would be short-term and would not significantly reduce air quality within the established air basins.

ADJACENT OWNERSHIPS

Restrictive types of land-use allocations, such as wilderness, wild and scenic rivers, Special Interest Areas and Research Natural Areas usually are incompatible with most private land management objectives. Those alternatives (PRF, NMK, and UNE) that dedicate considerable acreages to these types of uses, therefore, would create pressures to acquire private lands within and adjacent to the area.

Alternatives CUR, RPA, and CMD, which propose a high timber program, would require correspondingly higher levels of land line location and right-of-way acquisition through adjacent private land

DIVERSITY

Introduction

Alternate sections of land are privately owned over most of the TNF. The resulting 'checkerboard' ownership pattern seriously complicates analyses of forest diversity. Because the long-term management strategies for private lands are unknown to the TNF, the following discussions are limited to the effects of management on public lands.

On the TNF, the diversity issue is most strongly associated with maintenance of diverse forest seral stages over time (particularly mature and overmature forests), and important habitat elements such as snags, down logs, hardwoods, riparian habitats, meadows and meadow edges, and wetlands. Each alternative provides a unique strategy for managing the Forest and would result in distinct assemblages of forest seral stages, important habitat elements, and diversity of animal communities. Some vegetation types and their associated animal communities (e.g., lodgepole pine and pure hardwood stands) would not change substantially because little management occurs in these types in any alternative. Other types would change considerably in response to management.

The effects of the alternatives on riparian areas, meadows, and wetlands are discussed in the RIPARIAN section of this chapter. The effects on wildlife diversity are addressed in the WILDLIFE section. A comparison of other elements of forest diversity is presented below.

Overall Forest Diversity

The structure of forest vegetation is dynamic and changes in response to natural and induced disturbances. Most resource management programs on the TNF can induce changes in overall forest structure. However, the timber management program and wildfires have the largest effect on landscape diversity over time. Together, they have a profound effect on the species composition and structure of the forest vegetation. As the forest vegetation changes, animal communities adjust to the prevailing mix of habitat components.

While the characteristics of wildfires cannot be predicted, vegetation trends resulting from timber management can be estimated. Noteworthy seral stage changes that would occur from timber harvest are shown for the alternatives in Figures 4.5 through 4.9.

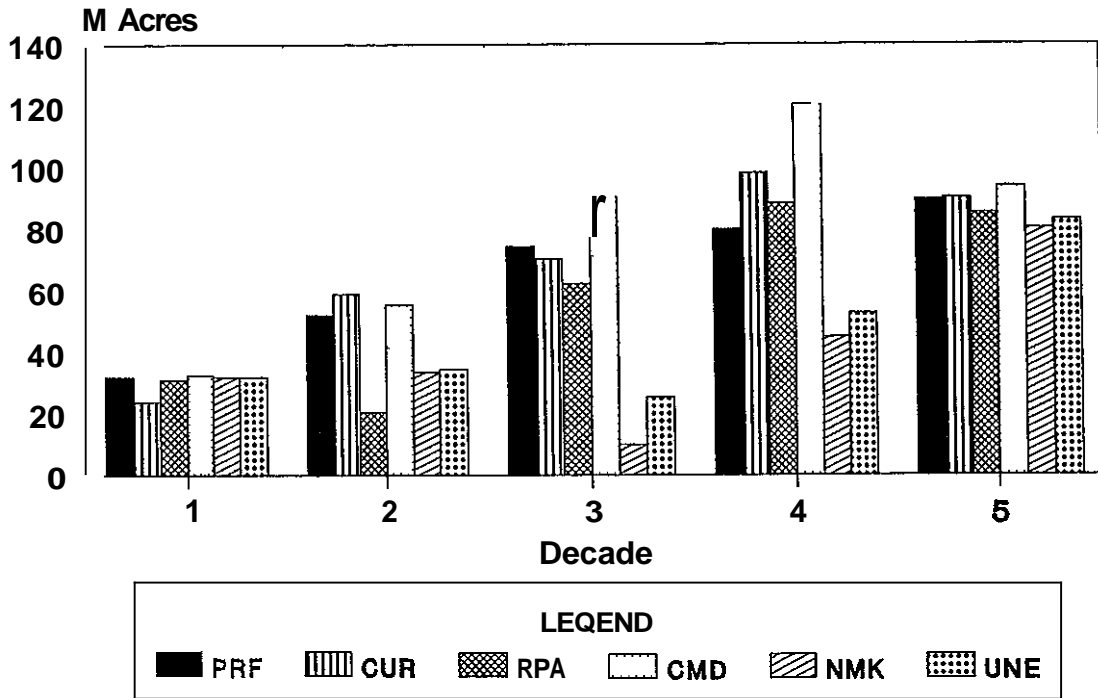
Figure 4.5 demonstrates the trends in early succession seral stages in commercial forest stands. The alternatives that provide large amounts of regeneration harvest (PRF, CUR, RPA, and CMD) would yield large increases in grasses and forbs (seral stage 1X). Alternatives that produce less regeneration harvest (NMK and UNE) would produce fewer acres of early succession stages. Seral stage 2X (brush and sapling trees) acreages follow similar trends to those shown for stage 1X in Figure 4.5. The minimum Regional standard for five percent of the forest seral stages in the 1X and 2X stands would be maintained in all alternatives.

Trends in open stands of pole and small sawlogs (seral stage 3A) are shown in Figure 4.6. Figure 4.6 indicates that all alternatives would maintain about the current acreages of seral stage 3A for the first two decades. NMK would reduce the seral stage by about 35 percent in decades 4 and 5. The PRF, CMD, NMK, and UNE alternatives would reduce the acreage of seral stage 3A by about 30 percent through the fifth decade. The CUR and RPA alternatives would reduce seral stage 3A by about 65 percent in the fifth decade. All alternatives would greatly exceed the minimum Regional standard of five percent of the forest in the 3A seral stage.

The abundance of closed stands of poles and small sawlogs (stages 3B and 3C) are displayed in Figure 4.7. All alternatives would maintain about the current acreage of seral stage 3B/C over the first three decades. The CUR and RPA alternatives would produce increases of 50 percent and 30 percent by the fifth decade, respectively. The PRF and CMD alternatives would yield increases in seral stage 3B/C of about 10 percent by the fifth decade, and the NMK and UNE alternatives would provide increases of about 25 percent. All alternatives would greatly exceed the minimum Regional standard of five percent of the forest in the 3B and 3C seral stages.

Trends in seral stage 4A are shown in Figure 4.8. The PRF, NMK, and UNE alternatives maintain stage 4A at about the current acreages for the first three decades. These alternatives would yield reductions of about 20 percent, 50 percent, and 30 percent, respectively, in the fifth decade. The CUR, RPA, and CMD alternatives would produce similar trends that would maintain reductions in seral stage 4A of 15 to 35 percent after the first two decades. All alternatives would greatly exceed the minimum Regional standard of 5 percent of the forest lands in the 4A seral stage.

**Figure 4.5: Trend in Wildlife Habitat 1X
(Grass/Forb)**



**Figure 4.6: Trend in Wildlife Habitat 3 A
(Pole/Medium Tree-Open Canopy)**

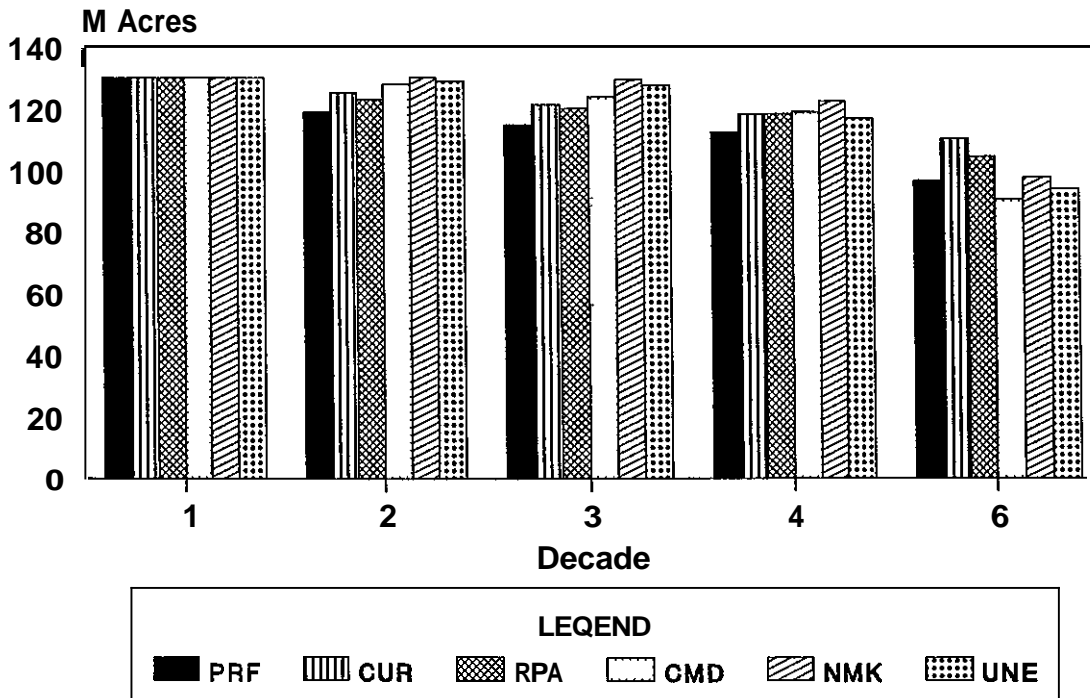


Figure 4.7: Trend in Wildlife Habitat 3B&C (Pole/Medium Tree-Closed Canopy)

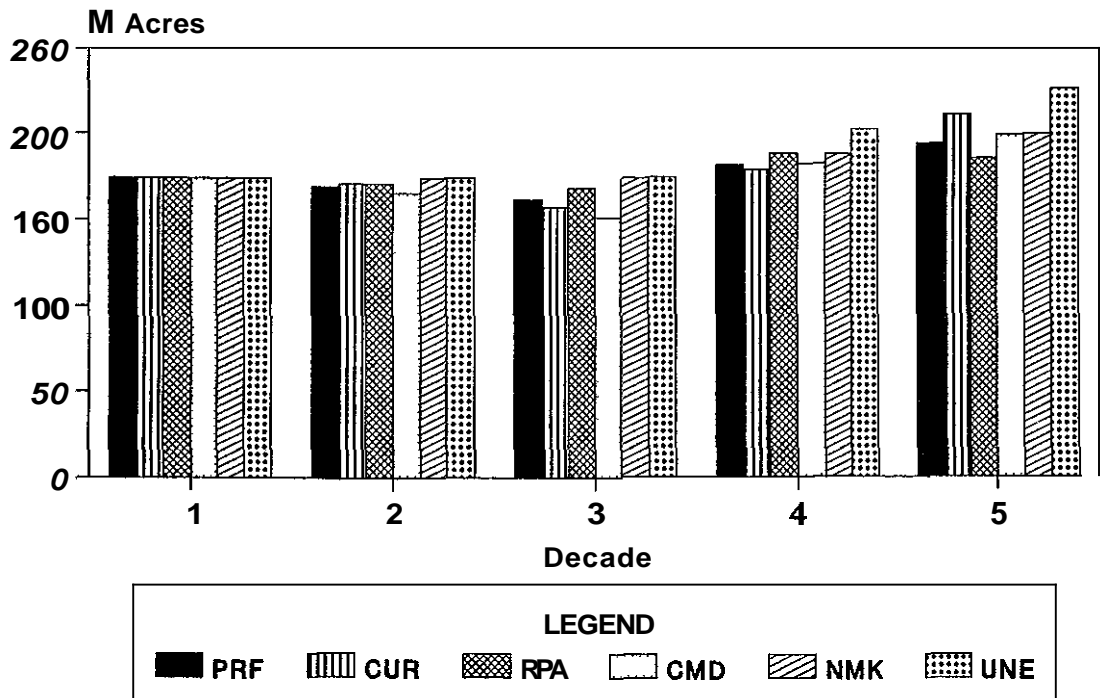


Figure 4.8: Trend in Wildlife Habitat 4 A (Large Tree-Open Canopy)

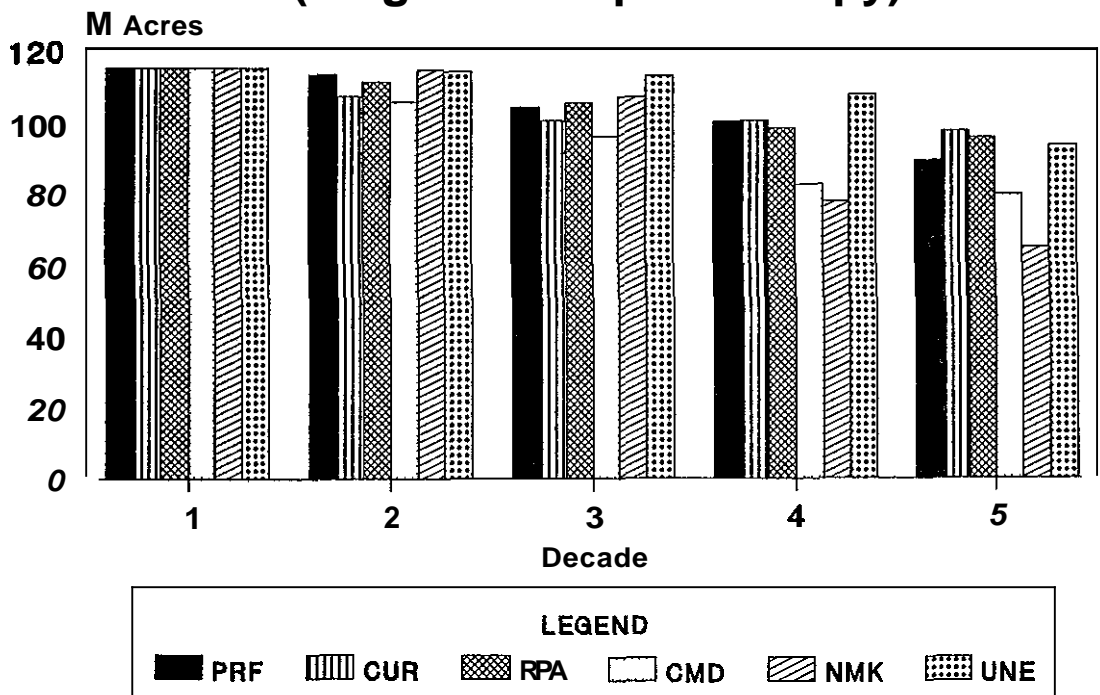
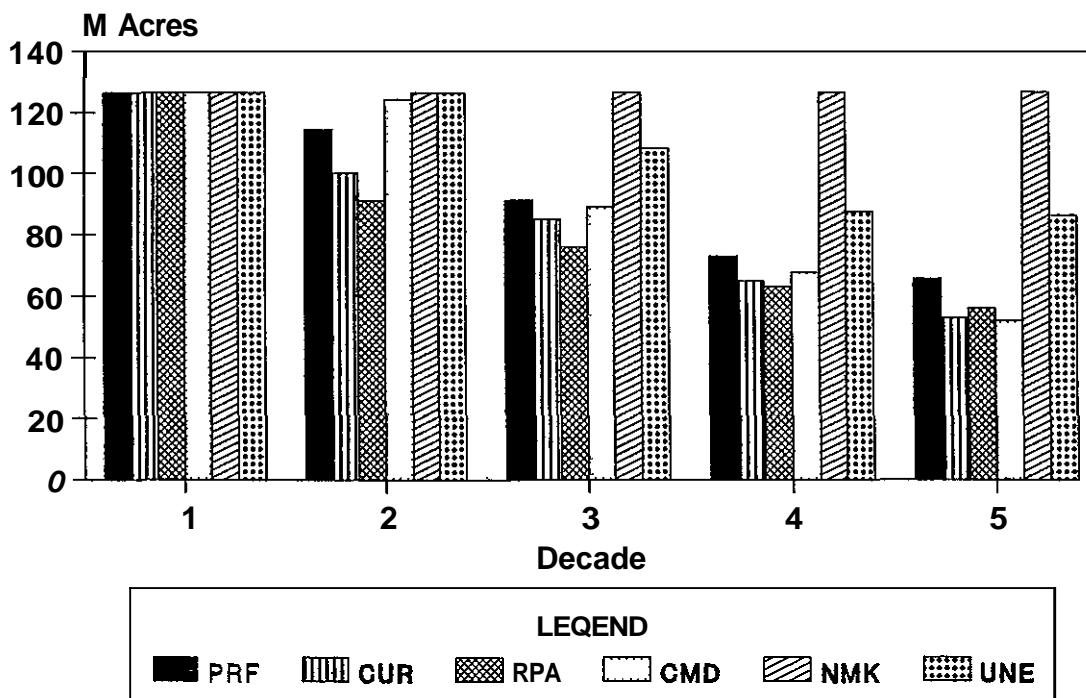


Figure 4.9: Trend in Wildlife Habitat 4B&C (Large Tree-Closed Canopy)



Mature and Overmature Forests

The availability of mature and overmature forest (200+ years old) is shown in Figure 4.9. The amount of seral stage 4B and 4C forest would be maintained at the current inventory (126,200 acres) in the NMK alternative. The NMK alternative would provide the **most** habitat for the wildlife **MIS** groups associated with seral stage 4B and 4C forests. Alternatives PRF, CUR, and RPA would reduce mature and overmature forest to about 50 percent of the current acreage by the fifth decade. Alternative CMD would yield about 60 percent less mature and overmature forest than exists today and would yield the least amount of habitat for the wildlife MIS group associated with seral stage 4B and 4C forests. The UNE alternative would reduce current inventories of seral stage 4B and 4C by about 35 percent in the fifth decade. All alternatives would meet the minimum Regional standard of 5 percent of the seral stages in the 4B/C stage. As described in the DIVERSITY section of Chapter 3, the amount of mature and overmature forest represented by the 4B/C seral stage cannot be determined with existing vegetation data.

Snags

The absence of suitable nesting and foraging sites has been suggested as a limiting factor for snag-dependent animals (Davis et al. 1983). The effects of the alternatives on snags is displayed in Tables 4.10 and 4.11. Table 4.10 compares the snag standards associated with each alternative. Table 4.11 estimates the potential population levels for representative primary cavity nesters. The estimates were made from data in Thomas et al. (1979). Secondary cavity nesters are assumed to follow similar trends to those shown for primary users.

TABLE 4.10. MINIMUM SNAG STANDARDS IN THE ALTERNATIVES (TREES/ACRE)

	PRF	CUR	RPA	CMD	NMK	UNE
Eastside Pine	1.5	1.5	15	15	15	15
All Other Habitats	1.5	1.5	2.0	15	20	15

Species	Eastside Pine All Alternatives	Other Habitat PRF, RPA, NMK	Other Habitat CUR, CMD, UNE
Common Flicker	100	100	100
White-headed Woodpecker	60	90	60
Hairy Woodpecker	80	100	80

Table 4.11 demonstrates that all alternatives would provide sufficient snags for maximum Forestwide densities of common flickers if other important habitat elements are present. The CUR, CMD, and UNE alternatives would reduce the forestwide carrying capacity for white-headed woodpeckers and hairy woodpeckers to about 60 percent and 80 percent of the maximum potential, respectively

The PRF, RPA, and NMK alternatives would also reduce the carrying capacity for white-headed woodpeckers and hairy woodpeckers in eastside pine habitats to 60 percent and 80 percent of the maximum potential. However, these alternatives would provide sufficient snags to permit nearly maximum populations of cavity nesters in other habitats. These estimates approximate the relationships between primary cavity nesters and snag densities observed on the TNF by Raphael and White (1984).

Down Logs

All alternatives would provide the same standard for maintenance of down logs and large woody debris (see discussion on maintenance of long-term soil productivity in the SOILS section of this chapter). The standards are thought to be sufficient to maintain viable populations of dependent wildlife species. However, empirical relationships for down logs and dependent wildlife are lacking.

Hardwoods

All of the alternatives would manage pure hardwoods (stands where less than 10 percent of the crown closure is conifers) for hardwood dependent resources. Accordingly, none of the alternatives would yield significant changes in pure hardwood stands over time.

Each alternative would allow hardwood reductions in other forest types. The reductions would occur in hardwood/conifer stands (where hardwoods comprise 51 to 90 percent of the crown closure) and commercial stands of mixed conifer that have a hardwood component. A comparison of the hardwood standards for the hardwood/conifer and mixed conifer stands is given in Table 4.12.

TABLE 4.12. HARDWOOD STANDARDS IN THE ALTERNATIVES (SQ. FT./ACRE)

	PRF	CUR	RPA	CMD	NMK	UNE
Hardwood/Conifer	30	5	5	5	30	30
Mixed Conifer	5	5	5	0	5	5

Table 4.12 indicates that the PRF, NMK, and UNE alternatives would provide the largest hardwood basal areas. These alternatives would yield the best conditions for the wildlife management indicator species group associated with hardwoods. Alternative CMD would provide the smallest hardwood basal areas, would yield the worst condition for wildlife associated with hardwood stands, and would present a risk for maintaining viable populations of associated wildlife in later decades. Alternatives CUR and RPA would yield intermediate hardwood basal areas and conditions for associated species.

FACILITIES

Road and Trails

The environmental consequences of each alternative on facilities are assessed by the following indicators: (1) miles of arterial, collector, and local road construction and reconstruction (Table 4.13), and (2) miles of trail construction and reconstruction (Table 4.14).

Traffic Characteristics and resource access requirements determine whether a road will be arterial, collector, or local. The Forest arterial and collector transportation system is 95 percent complete. All alternatives would build the 19 miles needed outside of roadless areas. However, the number of miles that would be constructed varies slightly with each alternative. Alternative NMK would require the fewest new miles, 19 miles of arterial and collector construction, because it does not access any unroaded areas. Alternatives PRF, RPA, and UNE would enter both the East and West Yuba roadless areas and would require an additional 11 miles (total of 30 miles) of arterial or collector road construction. Alternatives CMD and CUR would require an additional 18 miles (total of 37 miles) of arterial and collector roads because they enter all unroaded areas.

The Forest has 90 percent of the local road transportation system built. The number of miles of local road construction varies slightly by alternative based on the acres of capable, available, and suitable (CAS) lands being accessed. Alternative PRF would complete the transportation system in three decades. Alternatives CUR, RPA, CMD, NMK, and UNE would complete the transportation system in two decades due to increased harvest levels or silvicultural system needs. Alternative NMK requires the fewest miles of local road construction, 233 miles, because it does not access any unroaded areas. Alternative CUR requires the most miles of local road construction, 311 miles. Alternative CMD requires 304 miles of local road construction and completes all local road construction in the unroaded areas by the end of the first decade. The remaining alternatives require local road construction as follows: RPA (298 miles), PRF (275 miles), and UNE (263 miles).

Alternatives NMK and UNE require fewer total miles of local road construction because of the lesser amount of CAS lands accessed. However, some roads constructed as temporaries and later obliterated in the other alternatives would now become lower standard permanent roads under these alternatives. This is because silvicultural prescriptions for these alternatives requires multiple reentries to the same land base and therefore permanent access must be provided.

For all alternatives the amount of annual road maintenance would not vary substantially and would increase gradually as more roads are constructed.

Because each alternative has a different resource emphasis, the resulting traffic volumes also are varied and could affect road standards, such as width or alignment. However, all roads must be constructed to a standard that provides safe, cost-effective access consistent with the management strategy for each road. Specific road standards and road management objectives (such as closure) would be addressed during project-level environmental analysis.

The Forest Service only recommends road jurisdiction changes. The counties must agree to accept or convey all jurisdictional changes. It would be improbable that such changes would result from this plan because the counties' gas tax revenues for jurisdiction mileages are often less than the counties' maintenance expenditures for the same mileages.

Most roads would be built to achieve specific project objectives under each alternative's emphasis. Few roads would be built for administrative needs or under cooperative agreements. Reconstruction of roads is proportional to new construction and remains relatively constant.

Administrative Facilities

Currently, 23 Federally owned and 5 leased administrative sites are on the TNF. Under all alternatives, by the first decade the number of sites would be reduced to 20 government and 3 leased. Different consequences among the alternatives would result from the intensity of building development, i.e., size and number of buildings per administrative site, and not only to the number of sites. Further studies could identify additional reductions in leased facilities or reorganization of existing government sites for greater cost efficiency.

TABLE 4.13 - AVERAGE ANNUAL MILES OF ARTERIAL, COLLECTOR, AND LOCAL ROAD CONSTRUCTION/RECONSTRUCTION*

	DEC	PRF	PRF	CUR	CUR	RPA	RPA	CMD	CMD	NMK	NMK	UNE	UNE
Local Roads Arterial/Collector	1 1	16.5(C) 18(C)	25(R) 10(R)	25(C) 3(C)	37(R) 11(R)	24(C) 24(C)	36(R) 11(R)	24(C) 30(C)	36(R) 11(R)	21(C) 17(C)	32(R) 8(R)	24(C) 27(R)	36(4) 10(R)
				6(C)	37(R) 11(R)	6(C) 0.6(C)	36(R) 11(R)	6(C) 0.8(C)	36(R) 11(R)	23(C) 0.2(C)	32(R) 8(R)	3(C) 0.3(C)	36(R) 10(R)
Local Roads Arterial/Collector	3 3	3(C) 0.3(C)	25(R) 10(R)	0 0	37(R) 11(R)	0 0	36(R) 11(R)	0 0	36(R) 11(R)	0 0	32(R) 8(R)	36(R) 0	0 10(R)
Local Roads Arterial/Collector	4 4	0 0	25(R) 10(R)	0 0	37(R) 11(R)	0 0	36(R) 11(R)	0 0	36(R) 11(R)	0 0	32(R) 8(R)	0 0	36(R) 10(R)
		0 0			37(R) 11(R)	0 0	36(R) 11(R)	0 0	36(R) 11(R)	0 0	32(R) 8(R)	0 0	36(R) 10(R)
TOTAL Local Roads Arterial/Collector		275(C) 30(C)	1250(R) 500(R)	310(C) 38(C)	1850(R) 550(R)	300(C) 30(C)	1800(R) 550(R)	300(C) 38(C)	1800(R) 550(R)	233(C) 19(C)	1600(R) 400(R)	270(C) 30(C)	1800(R) 500(R)

Trails

The total projected miles of trail construction and reconstruction under Alternatives PRF, CMD, NMK, and UNE would be the same over five decades. Alternative CUR would have the least amount of trail miles while Alternative RPA would have the greatest amount over the first five decades. The trail construction and reconstruction program would be essentially completed by the end of the fourth decade. Table 4-14 displays the average annual trail miles by alternative by decade.

TABLE 4.14 AVERAGE ANNUAL MILES OF TRAIL CONSTRUCTION/RECONSTRUCTION *

DECADE	PRF	CUR	RPA	CMD	NMK	UNE
1	7.2	16.5	20.7	7.2	7.2	7.2
2	20.8	14.9	19.7	20.8	20.8	20.8
3	20.6	16.3	21.1	20.6	20.6	20.6
4	20.6	3.5	4.9	20.6	20.6	20.6
5	0.8	3.5	5.0	0.8	0.8	0.8
TOTAL	698	547	714	698	698	698

* Miles of trail construction and reconstruction; 1982 was 30.0

FIRE AND FUELS

The environmental consequences of implementing each alternative on fire and fuels are evaluated by the following indicators

Average Annual Acres Burned by Wildfire. (See Table 4.15)

Average acres burned annually would increase the most in the CUR alternative, as fire management budgets are constrained to the current level, whereas all other alternatives would have a 20 percent increase in budget. Under all other alternatives, the net wildfire losses would remain similar to the 1970-1979 average level.

Under the CUR alternative the fire suppression emphasis would be a mixture of large and small engines, while under all other alternatives the emphasis would shift to a mix of small engines and hand crews and the fire suppression budget would increase by 20 percent.

Acres of Young Timber Plantations.

Increases in acres of new plantations would increase the overall difficulty of fire protection on the Forest, and without increases in the fire management budget the losses from wildfire would increase.

How flammable a plantation is and how long it remains flammable varies by timber type. For example, the lower-elevation, mixed conifer plantations are highly flammable until about age 30, while the higher-elevation, red fir plantations remain so until age 60. Losses would be proportional to the acres of plantations, i.e., alternatives with more acres of plantations would have greater wildfire losses, and alternatives with fewer acres, fewer losses.

Another key factor affecting flammability and the difficulty to protect plantations from fire losses is the residual fuel loading. Any plantations with Northern Forest Fire Laboratory (NFFL) Fuel Models 12 (medium slash) and 13 (heavy slash) would be very difficult to protect over the entire rotation age of the plantation. Plantations on steep terrain (>35 percent) will have residual fuels and brush that would meet the NFFL Fuel Models 12 or 13 about 75 percent of the time, while on flatter terrain (<35 percent) it could be reduced to Fuel Model 11 (light slash) relatively easily in most cases.

Average Annual Acres of Prescribed Fire by Broadcast Burning.

Increases in acres burned by broadcast fire would increase the risk of fires escaping and damaging other resources (Table 4.16).

Acres to be broadcast burned are directly proportional to the amount of timber regeneration harvest under each alternative. Annual broadcast burn acres vary from a low of 700 in the 4th decade under Alternative

UNE to a high of 4,100 in the first decade under Alternative RPA. Although this is a rather large range, the risk would be within acceptable limits in all alternatives. Also, the amount of broadcast burning would most likely be reduced in the future as alternative methods to broadcast burning become more widely used to reduce residual fuels and prepare sites for planting.

TABLE 4.15 - EXPECTED AVERAGE ANNUAL ACRES BURNED BY WILDFIRE BY ALTERNATIVE BY DECADE*

DECADE	PRF	CUR	RPA	CMD	NMK	UNE
1	739	1,817	736	736	713	715
2	998	1,935	1,007	1,009	900	1,380
3	1,365	2,387	1,442	1,424	1,248	1,258
4	1,631	2,782	1,675	1,689	1,552	1,542
5	1,790	3,105	1,986	2,058	1,708	1,901

* The 1970 to 1979 average annual acres burned by wildfire was 1,038 acres.

TABLE 4.16 - PROPOSED AVERAGE ANNUAL BROADCAST BURNING BY ALTERNATIVE BY DECADE (ACRES)*

DECADE	PRF	CUR	RPA	CMD	NMK	UNE
1	1,800	1,900	4,100	2,400	1,700	1,100
2	1,600	1,700	1,900	1,400	2,600	1,100
3	1,300	2,200	2,100	2,000	1,800	2,000
4	1,100	1,800	1,900	1,600	1,200	700
5	1,200	1,700	1,200	2,000	1,100	900

* 1,200 acres were broadcast burned in 1982

FISH

Fish are a riparian area-dependent resource. Impacts to, and the management of, riparian areas and streamside management zones (SMZ's) adjacent to fish-bearing streams directly affects the condition of the aquatic ecosystem, instream fisheries habitat, and fish populations. Impacts to non-fish-bearing, or ephemeral, streams can also directly affect downstream fish habitat and the fisheries resource. Indirect effects to the fishery resource may be incurred from management of lands adjacent to riparian areas and SMZ's (e.g., cumulative watershed effects).

Best Management Practices (BMP's) for water quality and riparian areas would be implemented under all alternatives. Additional, more specific riparian area protection measures have been established through development of Forestwide standards and guidelines and **SMZ** guides for all Forest watercourses. The **SMZ** standards and guidelines, and BMP's, should prevent any serious, long-term impact to fisheries from other resource activities (Forest Plan, Chapter V). Short-term impacts would be minimized through mitigation measures and habitat improvements to ensure retention of adequate habitat to support viable populations of the fish indicator species.

The potential of the alternatives to affect the fisheries resource are in line with those described in the Environmental Consequences for RIPARIAN AREAS. They vary with the amount of harvest activities scheduled under each alternative, especially those on steeper ground (greater than 30 percent slope). They would be also greater in those alternatives with higher forage and road construction activities (which may produce more sediment). Finally, they would vary with the degree of protection accorded to the riparian area through SMZ designation and management.

The risk of impact to aquatic habitat and the fisheries resource would increase directly with the amount of activity scheduled to occur near and within the SMZ's for each alternative. The impacts could include acceleration of erosion and mass movement processes, introduction and removal of large woody debris, and removal of streamside vegetation. The greater the disturbance and removal of groundcover and streamside vegetation, including both deciduous trees and conifers, the greater the risk of detrimental impact to the fisheries resource.

Fish habitat improvements scheduled under each alternative would also affect aquatic habitat and fish production. The number of improvements are not significantly different for each alternative, but the effect of the improvements would be negated with increased riparian area/SMZ impacts. Not all habitat improvements could be accomplished under any given alternative. Each alternative provides the amount of improvement that realistically could be accomplished given the alternative's emphasis.

Under no alternative would the demand for fishing be met without continuation of the State's fish stocking program.

In all alternatives, habitat for the threatened species, Lahontan cutthroat trout, would be maintained or improved. Negative effects on the habitat would be minimized and mitigated. Existing populations would be protected and an additional population would be established.

PRF Alternative: This alternative schedules an overall large amount of activities on steep ground. The alternative also incorporates the Tahoe riparian area/SMZ standards and guidelines for protection and management of Forest streams and watercourses (see Appendix F of the Forest Plan). The potential for detrimental effects to the fisheries resource would be moderate.

CUR Alternative: This alternative schedules a large amount of steep ground harvest activities and does not incorporate the Tahoe riparian area/SMZ standards and guidelines. The potential for detrimental effects to the fisheries resource would be high.

RPA Alternative: This alternative schedules a very large amount of steep ground harvest activities. It does not incorporate the Tahoe riparian area/SMZ standards and guidelines. The potential for detrimental effects to the fisheries resource would be very high.

CMD Alternative This alternative, like the CUR alternative, schedules a large amount of steep ground harvest activities and does not incorporate the Tahoe riparian area/SMZ standards and guidelines. The potential for detrimental effects to the fisheries resource would be high to very high

NMK Alternative: This alternative schedules a moderate to high amount of steep ground activity and incorporates the Tahoe riparian area/SMZ standards and guidelines. The potential for detrimental effects to the fisheries resource would be moderate because this alternative requires much greater retention of ground cover than the other alternatives

UNE Alternative: This alternative schedules an overall low amount of steep ground activity and incorporates the Tahoe riparian area/SMZ standards and guidelines. The potential for detrimental effects to the fisheries resource would be low

FOREST PESTS

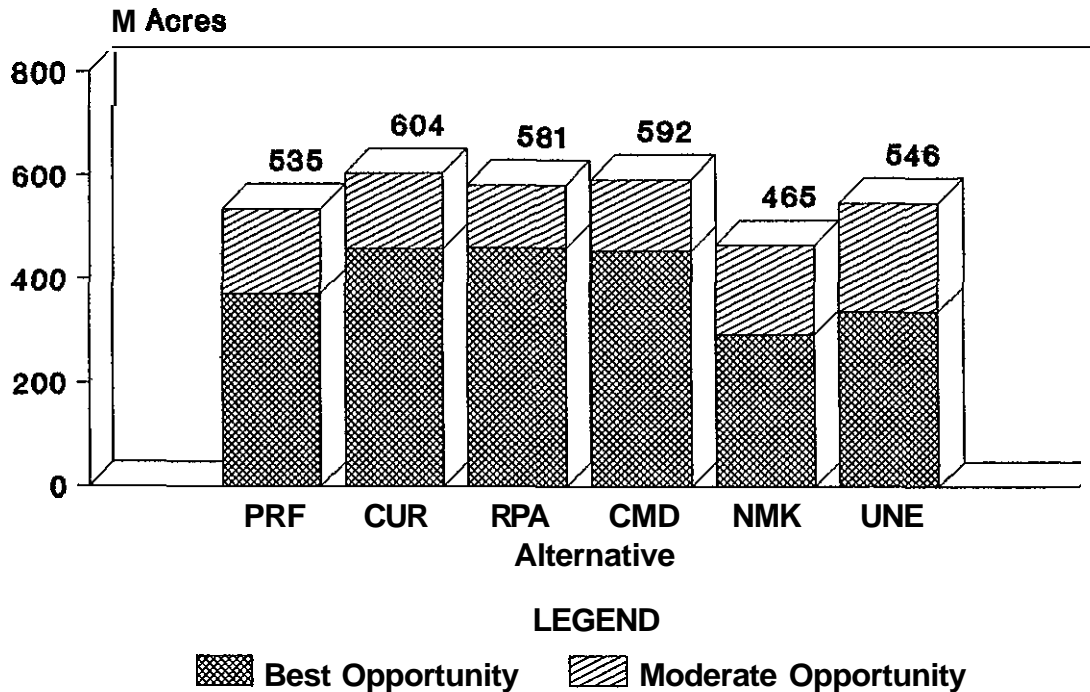
Different levels of integrated pest management (IPM) would be practiced under each alternative (see Chapter 2). These different IPM levels of management would result in different amounts of pest-related damage (depending to a certain degree on the intensity of vegetation management practiced). Indicators of pest-related damage include tree mortality, reduced growth, top killing, degradation, reduced tree quality, and reduced quantity and quality of seed production. Such damage could result in understocking, failure and delay of regeneration, reduced site productivity, degradation of recreation sites, more hazardous trees, and undesirable vegetation changes. Depending on management goals and objectives, pest-related damage could have unacceptable quantitative and qualitative effects on outputs and services

Adverse impacts of pests on resources would be mitigated or prevented by following Forestwide standards and guidelines (Forest Plan, Chapter V). If damage to a resource increases to an unacceptable level, a full range of options to reduce this damage would be evaluated on a site-specific basis and the selected option would be integrated into project activities. Biological effectiveness, environmental safety, and compatibility with other resource concerns would be considered when selecting a pest management option.

Insect and Disease Control

Vegetation management would provide the best opportunity to prevent and reduce the amount and impact of pest-related damage, although direct actions against pests could be necessary in specific situations. The level of pest damage by alternative could not be quantitatively predicted because of the lack of adequate methodologies. To compare alternatives, the intensity of vegetation management was used to reflect the opportunity to prevent and reduce damage. With greater opportunity to manage vegetation, less damage would be anticipated because pest considerations would be integrated into the vegetation management plan. Each prescription was analyzed to determine the intensity of vegetation management which would be expected. The prescriptions were categorized as having "limited", 'moderate', or 'best' opportunity to prevent and reduce pest-related damage. For example, management areas managed intensively for timber or that support developed recreation sites have the greatest opportunity and need to reduce and prevent pest losses. The Granite Chief Wilderness, on the other hand, has limited opportunities because pest management needs only occur when pests threaten resources on surrounding lands or when exotic pests threaten to cause unnatural loss to the wilderness resource. Figure 4.10 displays the relative opportunities to reduce the long-term potential for insect and disease problems for all alternatives.

Figure 4.10: Opportunity to Prevent Forest Pest-related Damage



The following narrative provides more details on the types and magnitude of anticipated losses for each alternative.

Alternatives **CUR**, **RPA**, and **CMD**. These alternatives should have the least amount of tree mortality and growth loss because they offer the greatest opportunity to manage vegetation and implement pest prevention practices. Where intensive management would occur (timber-full and timber-reduced prescriptions), pest-caused mortality and growth loss should decline from current levels. During stress periods, such as drought, the chance of large-scale, pest-caused losses should be reduced. In those areas receiving moderate levels of pest management (timber-special prescriptions), pest-caused losses should remain at current levels. Vegetation management in developed recreation areas should result in improved vegetation health, decreased tree mortality, and fewer hazardous trees. Vegetation management would help reduce degradation of recreation sites. Areas with low levels of vegetation management and pest prevention practices (timber-unsuited prescriptions) should experience tree mortality and growth loss at or above current levels with an increased chance of catastrophic losses. The lower elevation, over-stocked, low-site areas generally should experience high levels of tree mortality, while the higher elevation, moderately-to-sparsely-stocked sites should continue to experience moderate damage and low tree mortality.

Alternatives PRF and UNE. In these alternatives, tree mortality and growth loss could be greater than current levels because of a reduced level of pest management. Vegetation management in developed recreation areas should result in improved health of the vegetation, decreased tree mortality, and fewer hazardous trees. In those areas intensively managed (timber-full and timber-reduced prescriptions), pest-caused mortality and growth loss should decline, and the occurrence and magnitude of large-scale losses should be reduced. In those areas receiving moderate levels of pest management (timber-special prescription), pest-caused losses should remain at current levels, although large-scale losses should decline. Areas receiving low levels of vegetation management and pest prevention activities (timber-unsurtd prescription) could experience tree mortality and growth loss at or above current levels with an increased magnitude of large-scale losses. Generally, the lower elevation, over-stocked, low-site areas should experience high levels of tree mortality, while the higher elevation, moderately-to-sparsely-stocked sites should continue to experience moderate damage and low tree mortality

Alternative NMK This alternative could result in the greatest pest-caused losses of any of the alternatives. The lower amount of intensive vegetation management (timber-full and timber-reduced prescriptions) and pest prevention practices on forested land should result in more tree mortality and growth loss than current levels, and more frequent and higher levels of large-scale loss during stress periods. Vegetation management in developed recreation areas should result in improved health of the vegetation, decreased tree mortality, and fewer hazardous trees. The acres of forest land in SPNM areas that provide limited opportunities for pest prevention practices should experience varying damage depending upon the site and stand conditions, but, in general, increased losses could be expected

Because of the differing intensities of forest management implemented under each alternative, Alternatives CUR, RPA, and CMD should have the lowest level of pest-related damage, with Alternatives PRF and UNE somewhat higher. Moderate damage levels would likely occur under Alternative NMK, which provides the fewest opportunities to manage vegetation and implement pest prevention practices.

Vegetation and Animal Control

The indicators used to display the potential need to control weeds and animals are the acres requiring reforestation

TABLE 4.17 - ESTIMATED REFORESTATION ACRES BY ALTERNATIVE FOR FIVE DECADES

ALTERNATIVE	ESTIMATED REFORESTATION ACRES FOR FIVE DECADES
PRF	186,940
CUR	233,695
RPA	283,641
CMD	235,160
NMK	156,080
UNE	180,450

GEOLOGY

Landslides of various types occur naturally as a result of slopes seeking to reach equilibrium with their environment. When land management activities alter that equilibrium sufficiently, a slope movement will result.

Any one or a combination of factors can cause landsliding: oversteepened slopes, high water content, low soil/rock strength, and earthquakes. These conditions are sometimes encountered or created when roads are constructed or reconstructed, timber is harvested, mines are developed, or timber regeneration activities occur. Timber harvesting activities can damage soil structure, decrease the effect of root systems in providing soil retention, and change groundwater flows. These effects occasionally cause landslides within or adjacent to harvest units. Excavation of road cuts or road cut maintenance often remove the support for the slopes above and thereby cause slope failure. Fire, especially wildfire, but also prescribed fire, destroys vegetative cover and can thereby alter surface and ground water flows sufficiently to trigger slides. Mining can induce slides due to timber removal or road construction, or by direct removal of supporting material. Many other activities such as hydroelectric development, range use, powerline installation, quarrying, and facility construction can alter slope equilibrium and induce landslides of varying size.

On most lands, except the granitic areas where surface erosion predominates, landslides are the most important cause of sedimentation into streams and lakes. They can be hazardous to humans and wildlife.

The risks of impacts from landslides can be mitigated by:

- a. avoiding activity in unstable terrain.
- b. designing activities and structures to minimize the risk of triggering landslides
- c. designing activities and structures to account for the increased risk of sliding or damage due to earthquakes.
- d. maintaining structures/facilities so they do not degrade and become hazard-prone.

Under all alternatives, human activities will increase the risk of landslide occurrence and some landslides would occur. On a case-by-case basis, the magnitude of risk can best be predicted by studying the area, the proposed activities, and the **TNF's** Geologic Resources Inventory (in progress). As timber harvest, road building, forest regeneration, mining, and other activities access steeper terrain, the risk of human-caused landslides may have disproportionate increases.

Landslides can affect the suitability of lands for timber production. Until completion of the Geologic Resources (and Hazards) Inventory, no estimate is available of the amount of TNF land highly susceptible to landsliding, and no land has been withdrawn from the timber base as unsuitable due solely to risk of landsliding or other geologic hazards.

Consequences for geology management are approximated by analyzing the acreage involved in reforestation activities on steep slopes, miles of new road constructed on steep slopes, and acreage managed for Streamside Management Zones (SMZ). These factors can be used as indicators of the potential to affect land stability.

Assumptions important to this discussion are.

- Steep slopes can be used to indicate areas of higher geological landslide hazard.
- Timber harvest and reforestation may create adverse conditions leading to the reactivation of dormant landslides, or the initiation of new landsliding.
- Application of Best Management Practices (BMPs) would reduce impacts associated with landslides.
- The 50-year recurrence interval or greater climatic event can initiate landsliding in spite of project mitigation measures.
- Inner gorge areas have a high landslide hazard, are mainly associated with major stream drainages, and are included within the SMZ's.

Indicators of risk for slope stability are:

- Reforestation acreage on slopes > 30 percent
- SMZ guideline and acreage

Reforestation (slopes > 30 percent) Reforestation acreage represents all lands on which clearcutting and shelterwood cutting methods would occur. These lands are also the acres where artificial stand reestablishment and activity fuel reduction practices would occur. Cable and skyline harvest systems would be used for harvest methods and prescribed fire would be used for site preparation and fuels reduction. The implication of this indicator is that the higher the acres of reforestation under these circumstances, the higher would be the potential to encounter landslides and/or activate them.

Streamside Management Zone Guidelines. SMZ's relate to high landslide hazard because much of the very unstable inner gorge acreages are contained within SMZ's. The Tahoe FEIS alternatives offer different amounts and kinds of protection to these areas. As shown below, 'less restrictive' indicates that the minimum standards (MMR's) and acreage are included in the SMZ guidelines, while 'most restrictive' indicates that the more restrictive guidelines have been chosen and the intermittent stream SMZ's on over 30-percent slopes have been added for protection. The implication of this indicator is that the more restrictive the standards, and the greater the acreage in SMZ protection, the lower the potential of activating landslides from management activities.

ALTERNATIVE	SMZ GUIDES	5-DECADE AVERAGE REGENERATION ON SLOPES >30 PERCENT M/AC/DECADE	GEOLOGIC INSTABILITY RISK
PRF	most restrictive	21.9	lowest risk
CUR	less restrictive	24.3	moderate risk
RPA	less restrictive	28.3	most risk
CMD	less restrictive	23.7	moderate risk
NMK	most restrictive	20.4	lowest risk
UNE	most restrictive	20.3	lowest risk

HISTORICAL AND CULTURAL RESOURCES

Assessing the consequences of the alternatives on cultural resource sites is difficult. While precise, quantifiable measurements are not possible, effects may be evaluated in terms of degrees of risk, i.e., an alternative could raise or lower the risk of disturbing or destroying cultural resources.

To evaluate the degree of risk of each alternative, the following indicators were used.

1. Number of acres which would be disturbed by project activities.
2. Whether access would be increased or decreased
3. Whether visitor use would increase or decrease

Many ground-disturbing activities could destroy or damage cultural resources. For the purpose of displaying the effects of each alternative on cultural resources, only ground-disturbing timber management practices, including road construction, were assessed because such practices constitute a large percentage of Forest management activities. The second indicator acknowledges that the chance of cultural resource destruction would increase as sites become more accessible to the public. The third indicator assumes that the risk of site destruction would increase as recreation visitor use increases.

These indicators are not absolute, nor do they represent direct correlations. For example, many sites are not evident to the casual observer and may only be recognized by a trained archaeologist. Visitor use or access to sites could increase without adverse effects occurring. Also, planned ground-disturbing practices would be preceded by an on-the-ground cultural resource inventory that would identify and protect new sites. Only those sites which, for some reason, were not identified (obscured by heavy duff layers, dense vegetation, etc.) during the inventory could be harmed; others would be protected.

Impacts could also be beneficial. Cultural resource inventories, which can yield valuable information, are required before ground-disturbing practices occur. Once sites are inventoried they can be studied and managed.

About **75** percent of the Forest has not been inventoried for cultural resources. Based on past inventories, cultural resource sites would be found at a rate of one per 245 acres.

Adverse effects on cultural resources, which cannot be avoided through project design, would require mitigation. Past experience has shown that one site in 100 would require mitigation.

The following narrative discusses each alternative's effect on cultural resources by the three indicators.

Alternative PRF. The amount of TNF land disturbed annually by timber harvest activities in this alternative would be about 14 percent greater than the current amount. Cultural resource inventories would increase, causing more cultural resource sites to be identified. Increased road building and recreation use would raise the likelihood of damage to sites. When all indicators are considered under this alternative, the risk to cultural resources would be moderate and would be similar to the current situation.

Alternative CUR. This alternative would continue current management. The risk to cultural resources would be moderate over the next **50** years because of increased access, recreation use, and timber harvest activities.

Alternative RPA. Under this alternative, acres disturbed annually from timber harvest would increase 20 percent over the current acreage. Yearly road construction would be less than the current amount, but would continue to improve access to cultural resources. Recreation use would increase substantially. Risk to cultural resources would be moderate.

Alternative CMD. Risk to cultural resources would be high under this alternative. Over **70** percent more acres would be disturbed annually from timber harvesting compared to the current acreage. Annual road construction would be about the same as currently, but would continue to increase access to cultural resources. Recreation use would increase and raise the likelihood of cultural resource disturbance.

Alternative NMK Under this alternative, risk to cultural resources would be high on those acres intensively managed for timber production. Acres disturbed by timber harvest would increase 17 percent compared to the current acreage. Road construction would be less than the current amount. Access to Cultural resource sites would increase slightly and recreation use would increase. Overall risk to cultural resources under this alternative would be moderate.

Alternative UNE. This alternative would result in a moderate risk to cultural resources. Acres disturbed by timber harvesting annually would increase by 22 per percent over the current amount. Road construction would be reduced compared to the current situation, but would still increase access to cultural resource sites. The increased frequency of timber harvest entries on those acres managed under the uneven aged management system would increase risk to cultural resources on those acres. Recreation use would increase under this alternative.

TABLE 4.19 - EFFECTS ON CULTURAL RESOURCES BY ALTERNATIVE

EFFECT	PRF	CUR	RPA	CMD	NMK	UNE
M Acres Disturbed by Timber Harvest Activities Over 50-Year Period.	232	203	245	351	238	247
M Acres Requiring Cultural Resource inventory Over 50-Year Period	174	152	183	263	178	186
Number of Cultural Resource Sites Inventoried Over 50-Year Period	710	620	746	1073	729	758
M Acres Accessed by New Roads Over 50-Year Period	73	83	79	81	60	72
Cultural Resources Accessed by New Roads	298	338	322	330	245	293
Percent RVD Increase Over 50-Year Period	185	167	203	185	185	185
Risk to Cultural Resources*	M	M	M	H	M	M

* H = 'High' chance of disturbance
M = 'Moderate' chance of disturbance

HYDROELECTRIC PROJECTS

Future hydroelectric projects would be prohibited in the Grante Chief Wilderness, the North Fork American Wild River, and Special Interest and Research Natural Areas. Alternative NMK, which proposes the largest acreages for these uses, would result in proportionately fewer hydroelectric proposals. On all other lands, the Forest Service would respond to proposals on a project-by-project basis.

LANDS AND URBAN/RURAL WILDLAND INTERFACE

The type of land considered for acquisition would vary by alternative and would reflect the particular alternative's theme.

Many factors affecting land use would not vary by alternative, such as special uses and hydroelectric projects.

All alternatives, except Alternative CUR, designate the Donner Pass area as a transportation and utility corridor. This designation provides a major trans-Sierra route. Under all alternatives new corridors would be prohibited in the Granite Chief Wilderness, the North Fork American Wild River, and classified Special Interest and Research Natural Areas. Alternative NMK, which proposes the largest acreages of SIAs and RNAs, would result in proportionately fewer options for potential corridors through the Forest. On all other lands the TNF would respond to corridor proposals on a case-by-case basis.

Decade	PRF	CUR	RPA	CMD	NMK	UNE
1	128	120	132	135	115	115
2	100	100	88	100	100	100
3	30	30	30	30	30	30
4	10	10	10	10	10	10
5	10	10	10	10	10	10

* These projections assume that for the first two decades the landline program would respond primarily to the timber harvest programs and that, eventually, all boundaries would be established.

Urban/Rural Wildland Interface. The Forest's ability to respond to public concerns relevant to urban/rural wildland interface situations varies by alternative. Those alternatives with more forest management activities, such as timber cutting, fuels management, and road building would be less responsive to urban/rural wildland interface situations. Alternative NMK would be the most responsive to urban/rural wildland interface situations because the least number of acres of timber are cut and the size of openings would be small and less noticeable to the public. Alternative UNE would be fairly responsive to urban/rural wildland interface situations because a moderate number of acres of timber would be cut and treated, and much of the Forest would be treated with uneven-aged management, which would be the least noticeable to adjacent landowners. Alternative UNE would be between the NMK and PRF alternatives in terms of response to public concerns. Alternative PRF would be moderately responsive to urban/rural wildland situations due to a moderate level of acres being cut and a moderate opportunity to keep harvest openings small or less noticeable. Alternatives RPA, CUR, and CMD would be the least responsive to urban/rural wildland interface situations because the amount and therefore the intensity of harvest would be greater, and larger openings with more management activities would be more often evident to adjacent landowners.

LAW ENFORCEMENT

Law enforcement problems and consequences would not vary by alternative. Law enforcement problems are more a function of social morality and economics than any alternative's intent or emphasis. Law enforcement has been addressed under SOCIAL CONSEQUENCES.

MINERALS

Because the Forest Service only responds to outside requests to explore and develop locatable and leasable minerals, the alternatives only affect mineral development by proposing to withdraw from mineral entry and leasing different acreages with high, moderate, and low mineral potential. Areas proposed for withdrawal include research projects, experimental forests, Special Interest and Research Natural Areas, developed recreation sites, scenic highways, and areas of concentrated public use. Other withdrawals may occur, but exact locations are not known. Valid existing claims in these areas would not be affected. Assessing the effects of mineral development is difficult without knowing where and what kind of development would take place. The TNF would respond to applications for mineral development, and evaluate their potential impacts, on a case-by-case basis.

The current level at which saleable minerals are removed from the TNF is negligible (less than \$2,000 per year), and would remain so in all alternatives.

TABLE 4.21 • TOTAL ACRES BY ALTERNATIVE PROPOSED FOR WITHDRAWAL FROM MINERAL ENTRY AND LEASING

Mineral Potential 1/	PRF	CUR	RPA	CMD	NMK	UNE
High	5,018	0	5,698	127	14,066	5,698
Moderate	697	0	350	0	4,077	697
Low	1,037	1,061	3,431	1,474	20,086	5,013
TOTAL 2/	6,752	1,061	9,479	1,601	38,229	11,408

1. Grazing Capacity. Grazing capacity is the number of AUM's of livestock grazing that an area will support while meeting basic resource needs and associated resource management goals
2. Forage Production. Forage production is the estimated weight of forage produced that could be used by domestic livestock.
3. Opportunities for Increasing AUM's. The opportunities to increase AUM's vary according to which range improvement practices would be used given the alternative's emphasis.
4. Range Ecological Condition and Trend. Range condition is the current productivity of a range relative to what that range is naturally capable of producing. Trend is the direction of change in range condition.
5. Suitable Range Acres. Tahoe National Forest range lands were evaluated against Regional and Forest objectives, conflicts with other resources, and economic and social considerations to provide the gross suitable range acres.

Table 4.22 displays for each alternative the potential permitted AUM production, the five-decade average AUM production, and the pounds of forage available. Table 4.23 displays for each alternative the annual AUM production and suitable range acres. Following the tables is a discussion of each alternative's consequences on range.

TABLE 4.22 - POTENTIAL PERMITTED ANIMAL UNIT MONTH (AUM) PRODUCTION, FIVE-DECADE AVERAGE AUM PRODUCTION, AND POUNDS OF FORAGE 1/

	PRF	CUR	RPA	CMD	NMK	UNE
Potential Permitted AUM Production	23,000	22,900	34,200	27,000	9,000	23,000
Five-Decade Average AUM Production	21,700	21,600	32,900	23,000	5,000	21,700
Potential Forage consumed (million pounds)	23.0	22.9	34.2	27.0	9.0	23.0

1/ The 1982 AUM production level was 20,000

TABLE 4.23 - AVERAGE ANNUAL ANIMAL UNIT MONTH (AUM) PRODUCTION BY THE FIRST AND FIFTH DECADES AND MAXIMUM SUITABLE RANGE ACRES BY ALTERNATIVE 1/

Decade	Range Type	PRF	CUR	RPA	CMD	NMK	UNE
1	Permanent	11,900	13,200	24,600	11,900	9,000	11,900
	Transitory	8,900	9,200	9,600	8,900		8,900
	Total	20,800	22,400	34,200	20,800	9,000	20,800
5	Permanent	16,600	13,200	24,600	20,600	1,000	16,600
	Transitory	6,400	6,800	5,800	6,400	0	6,400
	Total	23,000	20,000	30,400	27,000	1,000	23,000
Suitable Range Acres	Gross Acres Permanent Transitory (Potential)	50,789 408,730	50,789 464,653	50,789 447,188	63,343 471,990	50,789 372,812	50,789 408,728

1/ The 1982 AUM production was 20,000

Alternative PRF. The potential permitted AUM production would increase 15 percent above the 1982 level. The five-decade average AUM production would be less than 1 percent higher than currently. The maximum permitted pounds of forage for domestic livestock would be less than 1 percent above the maximum permitted under current management.

In the first two decades, AUM production on permanent range would not change. AUM production on transitory range would increase slightly in the first three decades because of additional transitory range resulting from timber harvests. After the first three decades, the existing transitory range would peak and start to decline as explained in Alternative CUR. From the third through fifth decades, AUM production on the permanent range would increase by implementing environmental range management practices such as fencing, water developments, and improved management systems (deferred grazing, rest rotation, etc.) through dual use of the sparsely stocked eastside pine stands. By the end of the fifth decade, about 75 percent of the suitable permanent range, or 38,100 acres, would be under intensive management.

About 95 percent of the suitable range would be in satisfactory ecological condition by the year 2030. The trend of these acres in satisfactory condition would be static to upward. This alternative would allow a small amount of expansion of some of the 44 permittee operations.

Alternative **CUR**. The potential permitted AUM production would increase 15 percent above the 1982 level

For the first three decades, AUM production would increase moderately because of additional transitory range resulting from timber harvests. After the first three decades, the increase in AUM production from transitory range would peak and start to decline. This decline could be attributed to two factors: loss of transitory range as stands are reforested, since less transitory range would be produced from harvested true fir stands than from mixed conifer stands. Second, the increased transitory forage produced from the first decade backlog reforestation efforts would become unavailable as tree crowns close and understory forage is shaded out. AUM production from the existing permanent range would increase slightly in the first decade because of improvement in grazing systems. By the end of the fifth decade, about 25 percent of the suitable permanent range, or 12,700 acres, would be under intensive management.

About 85 percent of the suitable range would be in satisfactory condition by the year 2030. The trend of these areas in satisfactory condition would be static. This alternative would allow little to no expansion of permittee operations.

Alternative **RPA**. The potential permitted AUM production would increase 71 percent above the 1982 level, meeting the RPA target. Average AUM production over the 50-year planning period would increase 52 percent above current amounts. The maximum permitted pounds of forage for domestic livestock would be about 49 percent higher than the maximum permitted yield of current management.

For the first decade, AUM production on permanent range would increase by converting 26,709 acres of low-site brush land to range. By the end of the fifth decade, about 80 percent of the suitable permanent range, or 40,600 acres, would be under intensive management. Transitory range resulting from timber harvests would increase moderately during the first three decades.

After the third decade, the existing transitory range would peak and start to decline as explained in Alternative **CUR**.

About 95 percent of the suitable range would be in satisfactory condition by the year 2030. The trend of these areas in satisfactory condition would be static to upward. This alternative would allow ample opportunity for expansion of some of the 44 permittee operations and bring some new permittees into the range program.

Alternative **CMD**. The potential permitted AUM production would increase 35 percent above the 1982 level. The five-decade average AUM production would be 6 percent higher than the current average AUM production. The maximum permitted pounds of forage for domestic livestock would be about 18 percent higher than current maximum permitted yield.

AUM production and the range ecological condition would be the same as displayed in Alternative **PRF**.

This alternative would allow expansion of some of the 44 permittee operations.

Alternative **NMK**. The potential permitted AUM production would decrease about 55 percent below the 1982 level. This would be 77 percent below the current average AUM production. The maximum permitted pounds of forage for domestic livestock would be about 61 percent below current maximum permitted yield.

During the first decade, AUM production would decrease greatly by eliminating grazing in riparian, roadless, wilderness, and transitory range areas. AUM production would continue to be reduced by 2,000 AUM's per decade until 1,000 AUM's remain in the fifth decade. All of the available range would be managed extensively.

Because this alternative eliminates all but 1,000 AUM's over the five decades, the vegetation will develop mostly through natural succession and the ecological range condition can not be evaluated. Livestock would not be available as a management tool to maintain these areas and the ecological range condition in early successional stages. More than 40 families that depend on the Tahoe National Forest grazing allotments would lose their grazing privileges by the year 2030. Of the 40 plus families, it is estimated that 40 percent are totally dependent upon their grazing privileges and would likely lose their ranching operations.

It is also estimated that an additional 45 percent of the 40 plus families' operations would be significantly impacted to the point that they would lose their operations as well.

Alternative UNE. The potential permitted AUM production would increase 15 percent above the 1982 level. This would be less than 1 percent higher than the current average AUM production. The maximum permitted pounds of forage for domestic livestock would be less than 1 percent higher than the current maximum permitted yield.

AUM production and the ecological range condition would be the same as Alternative PRF.

This alternative would allow for a small amount of expansion of some of the 44 permitted operations.

RECREATION

To more accurately display consequences of each alternative on recreation, this section has been divided into the following subsections: (1) Developed Recreation, (2) Dispersed Recreation, (3) Winter Sports, (4) OHV Routes, and (5) Recreation Opportunity Spectrum. Specific indicators are discussed and displayed under each subsection.

Visitor day use data displayed for the alternatives were predicted from current Recreation Information Management data and projected recreation demand.

Developed Recreation

The two indicators for developed recreation are (1) developed recreation capacity and (2) recreation visitor day (RVD) use. Developed recreation capacity measures the persons-at-onetime (PAOT) the facility is designed to serve. RVD use is estimated from Recreation Information Management data and projected recreation demand.

Depending on the theme of each alternative, potential developed recreation sites, including ski areas, may or may not be made available for development. For example, in an alternative such as CUR where timber production is emphasized, few if any potential recreation sites would be available, and no increase in recreation capacity would occur over time.

Increases in use over time are related to projected population trends; depending on the availability of future recreation facilities and each alternative's management emphasis, use levels would vary.

Figure 4.11 displays developed site recreation use in the fifth decade. Table 4.24 displays developed recreation capacity and RVD use by decade for each alternative.

Figure 4.11: Developed Recreation Use - Developed Sites by the Fifth Decade

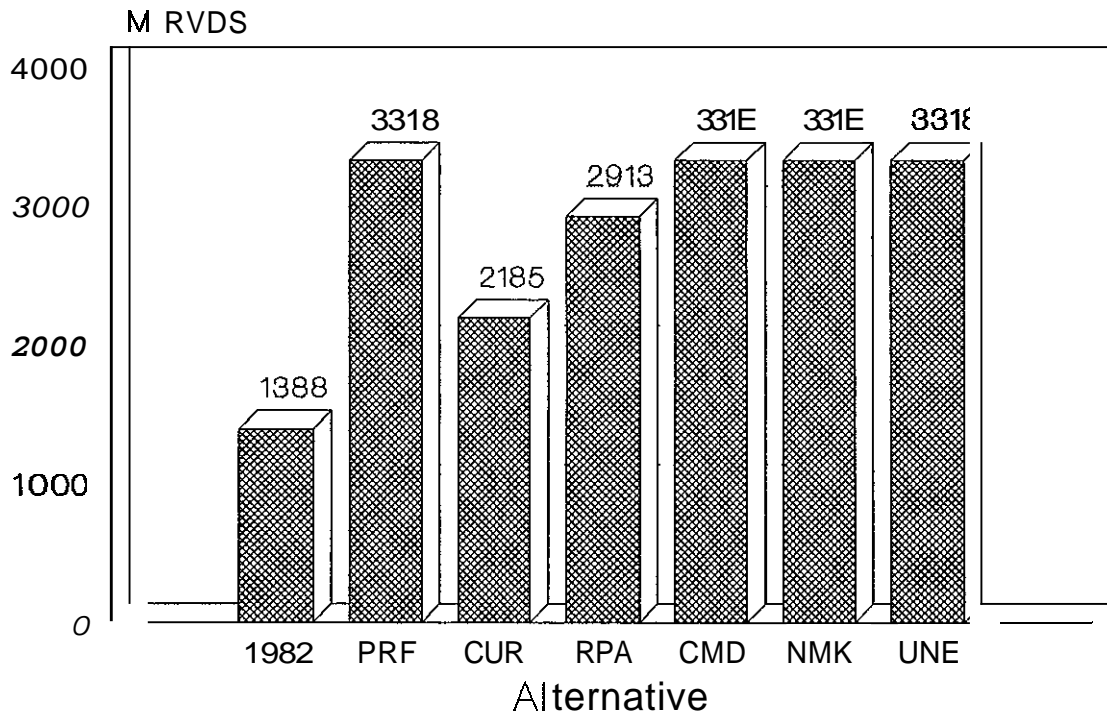


TABLE 4.24 • DEVELOPED RECREATION CAPACITY AND RECREATION VISITOR DAY USE BY ALTERNATIVE ON NFS LANDS

Decades	PRF	CUR	RPA	CMD	NMK	UNE
Decade 1 Capacity-PAOT 1/ MRVD-Use 2/	14,234 1,976	14,234 1,976	14,234 1,976	14,234 1,976	14,234 1,976	14,234 1,976
Decade 2 Capacity-PAOT MRVD-Use	21,537 2,393	14,234 2,185	21,537 2,393	21,537 2,393	21,537 2,393	21,537 2,393
Decade 3 Capacity-PAOT MRVD Use	25,056 2,784	14,234 2,185	25,056 2,784	25,056 2,784	25,056 2,784	25,056 2,784
Decade 4 Capacity-PAOT MRVD Use	28,161 3,129	14,234 2,185	19,700 2,913	28,161 3,129	28,161 3,129	28,161 3,129
Decade 5 Capacity-PAOT MRVD-Use	29,862 3,318	14,234 2,185	19,700 2,913	29,862 3,318	29,862 3,318	29,862 3,318

Overall recreation experiences would be high, particularly for those activities not associated with motor vehicle use.

Dispersed Recreation

The indicators for dispersed recreation are (1) the acreage of land available for dispersed recreation, measured by ROS class, and (2) the anticipated recreation use, measured by the estimated RVD use. These dispersed recreation indicators are displayed in Table 4.27 in the ROS discussion.

In all alternatives dispersed recreation use would more than double by the fifth decade. The capacity of the TNF for dispersed recreation is sufficient to accommodate this level of demand. For some forms of dispersed recreation activity, the quality of the recreation experience would vary by alternative.

PRF and UNE Alternatives. Under these alternatives, expanded visitor information services would raise the quality of experience for all dispersed users. The TNF trail system would be expanded for both motorized and nonmotorized users and designated OHV routes would be established. Road system expansion would benefit dispersed motorized users and would provide access to newly designated Special Interest Areas. In roaded areas the PRF alternative would look altered in many areas because of logging activities; the UNE alternative would have less acres looking altered because in many situations uneven-aged timber management activities would be far less apparent.

CUR and RPA Alternatives. These alternatives would expand opportunities for motorized use, with road and trail system expansion somewhat higher in **Alternative RPA** than in CUR. Both alternatives would develop new dispersed recreation facilities and both would have a significant number of roaded areas where the landscape would look altered from the natural State because of logging activities.

CMD Alternative. Timber harvesting and associated road building would accelerate under this alternative. Additional roads would improve access to and within dispersed areas and benefit motorized users, but extensive landscape modifications could lower the quality of the recreation experience for those looking for near-natural settings. OHV use would be restricted to protect productive forest land. Trails would be expanded, but overall dispersed facility development would not be emphasized. Opportunities for semi-primitive nonmotorized recreation experiences would significantly diminish.

NMK Alternative. This alternative would provide the highest level of dispersed recreation experience for nonmotorized users. Trails would be built to support the nonmotorized use. The establishment of numerous Special Interest Areas would further enhance recreation experiences. Low levels of timber harvest and small openings would ensure that a near-natural forest environment is maintained, but the relatively low levels of associated road construction would limit motorized recreation opportunities. Semi-primitive motorized and OHV recreation would be the most limiting in this alternative.

Winter Sports

A component of the recreation issue is the development and operation of downhill skiing facilities. Many major ski resorts include both private and National Forest System land. Existing resorts on the Tahoe National Forest include four facilities with a combined skiers-at-one-time (SAOT) capacity of 12,100, which include 6,300 SAOT on private land and 5,800 SAOT on Forest land. Four potential winter sports areas have been identified, these areas have a total potential capacity of 13,500 SAOT and 27,000 SAOT on TNF and private lands, respectively.

The indicators and measurements for developed alpine skiing are (1) the available acres, (2) the estimated SAOT capacities, and (3) the RVD use on TNF lands. These indicators are displayed for the alternatives in Table 4.25 and Figure 4.12. As with developed recreation, variations in the amount of use and capacity projected are related to the management emphasis and land available for facility development associated with a given alternative. Thus, in an alternative where downhill skiing is emphasized, potential ski areas would be made available for development and the use and capacity figures shown in Table 4.25 reflect that.

TABLE 4.25 - DEVELOPED DOWNHILL SKIING - ACRES AVAILABLE, SKIERS-AT-ONE-TIME CAPACITIES, AND RECREATION VISITOR DAY USE ON NFS LAND 1/

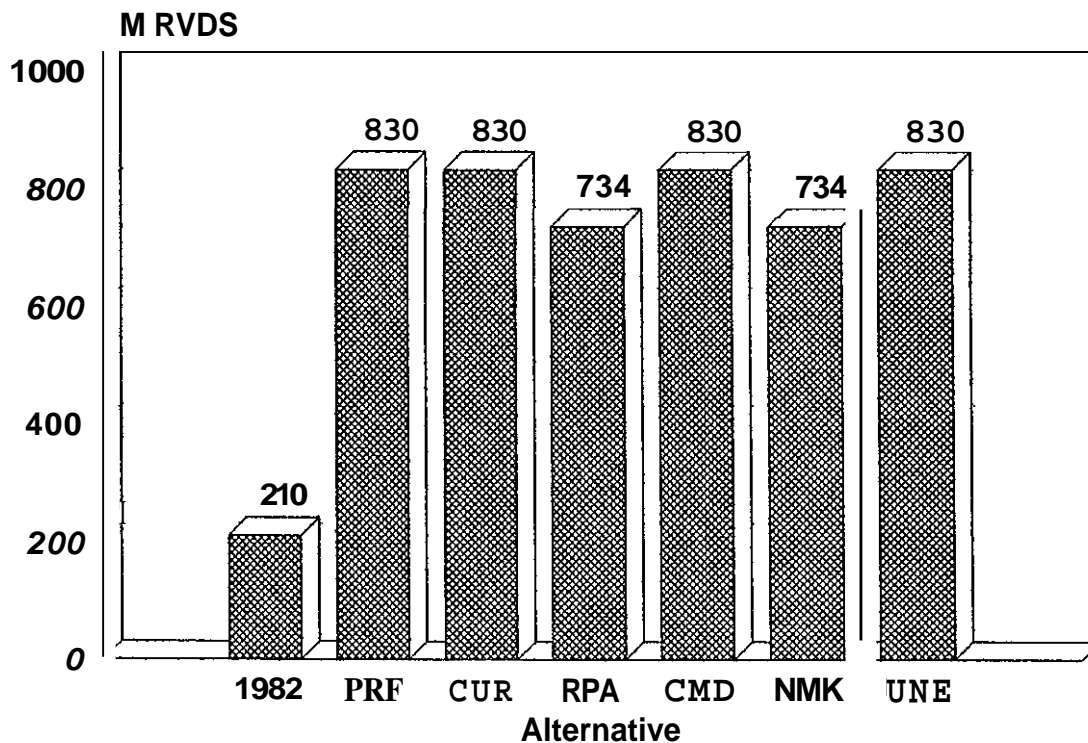
Decade	Category	PRF	CUR	RPA	CMD	NMK	UNE
1	Developed Acres	545	545	545	545	545	545
	Skiers-at-One-Time	9,250	9,250	9,250	9,250	9,250	9,250
	M RVD Use 2/	292	292	292	292	292	292
2	Developed Acres	1,345	1,345	1,345	12,250		1,345
	Skiers-at-One-Time	12,250	12,250	12,250		12,250	12,250
	M RVD Use 2/	379	379	379	379		379
3	Developed Acres	2,945	2,945	2,945	2,945		2,945
	Skiers-at-One-Time	17,250	17,250	17,250	17,250	17,250	17,250
	M RVD Use 2/	492	492	492	492		
4	Developed Acres	5,195	5,195	4,496	5,195	4,496	5,195
	Skiers-at-One-Time	20,250	20,250	19,318	20,250	19,318	20,250
	M RVD Use 2/	639	639	639	639		639
5	Developed Acres	6,095	6,095	4,496	5,195	4,496	8,095
	Skiers-at-One-Time	22,750	22,750	19,318	22,750	19,318	22,750
	M RVD Use 2/	830	830	734	830	734	830

1/ Additional sites would be constructed by the private sector under special-use permit. Sites would be developed only if demand is present at that time. This table does not include MRVDs and PAOT's on private land.

2/ M RVD Use - Thousands of Recreation Visitor Days

Note: The existing situation has 545 developed acres, 5,800 Skiers-at-one-Time capacity, and 210 MRVDs of use.

Figure 4.12: Developed Recreation Use - Ski Areas by the Fifth Decade



PRF, CUR, CMD, and UNE Alternatives Under these alternatives, existing downhill ski facilities would expand within their existing boundaries in the first decade or **two**. This expansion would increase the capacity of existing sites by adding ski runs, lifts, and base facilities without increasing the overall area perimeter. Beyond the first decade, new facilities would be constructed in new, currently undeveloped sites in response to demand. The undeveloped sites may be adjacent to existing ski areas or entirely new sites away from existing sites. By the fifth decade, **90** percent of all potential ski facilities would have been constructed to meet projected demand. The construction of new ski facilities would actually depend on market conditions and the capability of transportation and other support facilities to accommodate increased skiers. Existing transportation facilities would not be sufficient to meet projected ski area demand without shifting the pattern of use (weekday versus weekend) or by emphasizing mass transit. Without such changes the quality of the recreation experience would be reduced. The CMD alternative would concentrate ski area expansion to adjacent areas where timber resources would be least affected.

RPA Alternative. Under this alternative, expansion of existing downhill ski facilities and development of new ones would occur through the first four decades if market conditions, necessary support facilities, and transportation systems are available. Demand for downhill ski facilities would not be met in the fifth decade and would fall short of demand by **12** percent.

NMK Alternative The consequences would be the same as PRF, except that by the fourth decade ski area development would lessen, and by the fifth decade ski area construction would stop because this alternative would not permit ski area development in mature forest types and areas committed to SPNM ROS designation. Thus, while capacity would fulfill demand through the fourth decade, capacity would limit use in the fifth decade to **12** percent below demand.

OHV Routes

A component of the recreation issue is off-highway vehicle (OHV) use. The indicators of OHV are the acres and miles of roads and trails open, restricted, or closed to off-highway vehicle use. These are displayed in Table **4.26** for the alternatives. Below is a discussion of OHV use by alternative

Under all alternatives the final determination of designated routes will be made by the Trail Management Plan to be completed one year after the Forest Plan is approved. Until then, existing undesignated roads and trails within newly assigned Designated Routes Only areas will remain open to use except as the Forest Supervisor may determine necessary under Executive Order (E.O.) **11644**, as amended by E.O. **11989**, to protect resources against adverse effects, and under regulations to protect public safety.

The miles of roads and trails open, restricted, or closed to OHV use vary according to dispersed recreation trends. Changes in acres open, restricted, or closed reflect the theme and management prescriptions of each alternative.

PRF and UNE Alternatives. Acres open to OHV use would decrease about 70 percent during the first decade and miles of roads and trails open to OHV use would decrease about **8** percent. Acres restricted to OHV use would increase **52** percent, while areas closed would decrease 0 percent during the first decade. Miles of roads and trails with restricted OHV use would increase **88** percent, and miles closed to OHV use would decrease 89 percent. These changes in OHV categories, especially the increase in the restricted category, result from these alternatives' themes to emphasize and protect amenity benefits while still providing for dispersed OHV opportunities.

CUR Alternative. No change would occur in the current acres of OHV use classification. Miles of roads and trails open and restricted to OHV use would both increase **24** percent. Miles of roads and trails closed to OHV use would decrease **4** percent.

RPA Alternative. Acres open to OHV use would decrease 66 percent the first decade, and miles of roads and trails open to OHV use would decrease 8 percent. Acres and miles closed to OHV use would decrease **26** percent and **84** percent, respectively. Acres and miles with restricted OHV use would increase **124** percent and **86** percent each. These changes result from the alternative's direction to protect resources.

CMD Alternative. Acres open to OHV use would decrease **59** percent the first decade. Miles of roads and trails open to OHV use would increase **14** percent. Acres and miles of restricted OHV use would increase **29** percent and **81** percent, respectively. Acres closed to OHV use would decrease **54** percent, a significant change. Miles of roads and trails closed to OHV use would decrease **90** percent. This alternative would have less OHV closure and more land available for restricted OHV use. The increase in the restricted category results from the alternative's direction to avoid conflict with or damage to capable forest land.

NMK Alternative. This alternative would result in the largest decrease (**100** percent) to zero acres open to OHV use. Road and trail construction would increase by about **25** percent the miles of road open to OHV use. This alternative would increase restricted acres about **41** percent and closed acres about **51** percent. Miles of roads and trails in restricted categories would increase 60 percent while closed miles decrease **41** percent. These changes result from the amenity resource protection and SPNM area designations in this alternative.

Recreation Opportunity Spectrum

The ROS classes are urban (U), rural (R), roaded natural (RN), semi-primitive motorized (SPM), semi-primitive nonmotorized (SPNM), and primitive (P). Currently no primitive or urban ROS classes exist on the TNF and none are projected by the fifth decade. (Definitions for the ROS classes are found in the Glossary in the Plan.) Lands in certain ROS classes are appropriate or even necessary as settings for certain developed or dispersed recreation activities. The ability to meet different recreation demands depends on the ROS class. Table 4.27 displays both the acreage and use in each ROS class to illustrate this relationship.

Generally, ROS classes would change to more developed categories. ROS changes to less developed classes are less likely to occur. A given area would not likely change from rural to roaded natural, or roaded natural to semi-primitive motorized, unless management places specific emphasis and direction on such a conversion. Locations where this change in direction could occur would be in the Granite Chief Wilderness, the North Fork American Wild River, or designated SPNM or motor vehicle closure areas. In these locations management direction and action would maintain or establish semi-primitive nonmotorized environments.

In the fifth decade, capacity in the rural and roaded natural ROS classes would exceed demand in all alternatives. Because acres accessed by roads would increase for all alternatives by **12** to **22** percent, the roaded natural acres would increase accordingly. All alternatives would not meet demand for all types of facilities and environments (such as developed recreation sites and downhill ski areas) within these classes. Furthermore, the quality of the recreational settings would vary between alternatives. Some alternatives emphasize developed recreation and would therefore have newer, higher standard, more complete facilities, while other alternatives would have older, deteriorated, and crowded facilities. Roaded natural settings for dispersed recreation would also be more modified and less natural in alternatives emphasizing commodity production than in alternatives emphasizing recreation.

TABLE 4.26 - ESTIMATED MILES AND ACRES OF OFF-HIGHWAY VEHICLE (OHV) CATEGORIES FOR THE FIRST DECADE

OHV USE INDICATOR	MISTING SITUATION	PRF	CUR	RPA	CMD	NMK	UNE
CLOSED MILES ROADS & TRAILS ACRES	819 43,050	68 44,939	82 19,793	133 31,798	85 19,923	483 220,072	68 44,939
OPEN MILES ROADS & TRAILS ACRES	747 484,999	685 142,103	1,486 358,321	688 164,881	850 200,312	552 0	685 142,103
DESIGNATED ROUTES ONLY SUMMER OPEN OVER SNOW MILES ROADS & TRAILS ACRES	1,344 266,325	1193 266,219	808 194,891	1,111 266,097	1,144 269,567	971 171,371	1,193 266,219
DESIGNATED ROUTES ONLY MILES ROADS & TRAILS ACRES		50,829	9 2,082	338 80,860	302 71,176	172 187,125	294 50,829
DESIGNATED ROUTES ONLY SUMMER - CLOSED OVER SNOW MILES ROADS & TRAILS ACRES		17 10,705	20 4,742	17 4,117	17 4,117	16 1,504	17 10,705
CLOSED SUMMER - OPEN OVER SNOW MILES ROADS & TRAILS ACRES		43 11,018	46 11,018	43 10,342	168 39,541	42 7,255	43 11,018
DESIGNATED ROUTES ONLY - CLOSED 11/16 TO 4/30 MILES ROADS & TRAILS ACRES		194 78,823	57 13,789	194 46,541	0 0	186 17,309	194 78,823
UNUSEABLE ACRES MILES ACRES		789 189,738	787 189,738	792 189,738	806 189,738	760 189,738	789 189,738
TOTAL FOREST ACRES	794,374	794,374	794,374	794,374	794,374	794,374	794,374
TOTAL ROADS & TRAILS SYSTEM MILES	2,910	3,302	3,294	3,317	3,372	3,182	3,302

By the fifth decade, demand in the semi-primitive motorized ROS class would not be met by any of the alternatives. While the current use (185 MRVDs) is well below the current capacity (382 MRVDs), demand in this ROS class should grow to about 430 MRVDs by the fifth decade. Conversely, capacity would be reduced in all alternatives. The trend toward declining SPM acres is inversely related to (1) the increased roading and vehicular access common to all alternatives, (2) the increasing landscape modification and loss of natural-appearing settings in all alternatives, and (3) the conversion of SPM areas to semi-primitive nonmotorized by motor vehicle closures, especially in the NMK alternative. Because SPM demand would not be met, use would transfer to other ROS settings or other forests that could provide more SPM areas.

The semi-primitive nonmotorized ROS class capacity of the TNF varies widely between alternatives. The NMK alternative designates several SPNM areas in addition to the Granite Chief Wilderness and the North Fork American Wild River. The other alternatives designate few or no areas for SPNM recreation outside of the wilderness and the wild river. In the NMK alternative, SPNM acre capacity would increase the most (69 percent). Under all alternatives except NMK, SPNM acres, like semi-primitive motorized areas, would continually diminish because of roading and commodity production. The CMD and CUR alternatives, because they emphasize commodity production, roading, and motorized recreation, would reduce SPNM capacity the most (41 percent). With demand projected to reach 378 MRVDs by the fifth decade, only the NMK alternative, which has significant amounts of designated SPNM acreage, would have SPNM capacity sufficient to meet demand. SPNM use in this alternative would exceed the 378 MRVD demand level because use would shift from other ROS settings (especially SPM) or from other forests. This shift would occur because of limited capacity in the other ROS classes and because designating areas as SPNM would attract additional use.

The projection of ROS class acreage uses the following factors and assumptions:

1. More acres of ski area development will increase rural ROS class acres.
2. More acres of other recreation development will increase rural and roaded natural ROS class acres.
3. More acres accessed by new road development will increase roaded natural ROS class acres.
4. Former roadless areas proposed for SPNM recreation or motor vehicle closure designation would be managed to achieve semi-primitive nonmotorized settings.
5. Any increase in the more developed ROS classes would decrease the less developed ROS classes, and a flow upward in the ROS development scale would occur over time.

Projections of ROS class usage assume the following:

1. The proportion in each ROS class of total Forest RVDs would remain the same unless changed by increases or decreases in the percentage of acres in an ROS class; this change would similarly change the proportion of use in that class.
2. Use could not exceed the capacity in each ROS class.
3. Use could exceed demand projections for each ROS class because of shifts in use from one class to another.

PRF and UNE Alternatives. By the fifth decade, rural ROS class acreage and capacity would increase 49 percent above current conditions as recreation sites and alpine ski areas are expanded or developed to meet demand. Because of the emphasis on additional high standard facilities, opportunities for high quality developed recreation experiences would be enhanced. Use would grow 173 percent by the fifth decade because of the increased high quality and quantity of rural ROS class facilities.

Roaded natural acreage would increase 8 percent in the PRF alternative and 7 percent in the UNE alternative by the fifth decade, primarily because of new road construction and timber harvesting. These activities would convert semi-primitive motorized and nonmotorized areas to RN.

Recreation development would both remove and create roaded natural acres because SPM and SPNM would become RN acres, and some RN areas would become rural. The TNF would be **74** percent roaded natural by the fifth decade. For the PRF alternative, besides growing in size, the RN areas would generally be more modified with **less** natural settings for dispersed recreation than current RN areas. This increased disturbance of the natural environment, caused primarily by timber management activities, would be most prevalent in the lower elevations on the western slope of the TNF. The quality of RN recreation opportunities and experiences would be reduced for recreationists concerned with a natural setting, even though the acreage would be more than sufficient to satisfy demand. The UNE alternative, although modified because of timber management and other management activities, would be far **less** modified than the PRF alternative because the acres of uneven management would appear **less** noticeable. Frfth-decade **use** would be **100** percent above the existing level for the PRF alternative and **98** percent above the existing level for the UNE alternative.

Both semi-primitive motorized and nonmotorized acres would be reduced as more of these ROS classes become roaded, altered, and converted to RN. Even though current SPM **use** (**185** MRVDs) is well below current capacity (**382** MRVD's), the shrinking SPM land base and the increasing SPM demand projections would meet and cross in the first decade. Semi-primitive motorized acres would decrease **41** percent for PRF and **38** percent for UNE by the fifth decade. Use would increase **8** percent by the fifth decade for the PRF alternative and **14** percent for UNE.

Because certain areas (the Granite Chief Wilderness, Grouse Lakes, the North Fork of the American River, and Snow Mountain) would be designated for semi-primitive nonmotorized management, SPNM acres would be converted to roaded natural acres at a lesser rate than would SPM acres. Initially, SPNM acreage would even increase **as** management converted parts of the these designated areas to SPNM from other ROS classes. But as the remaining SPNM areas (not designated as SPNM or wilderness) are roaded and converted to roaded natural, capacity would diminish until, by the second decade, projected SPNM demand would not be met. Use would continue to grow past the fifth decade until it met capacity of about 356 MRVDs, which is still below the fifth-decade projected demand.

CUR Alternative. Rural acres would remain consistent through the five decades because this alternative emphasizes maintaining developed recreation capacity at current levels. Alpine ski area capacity would expand to meet demand. Rural capacity would meet demand through five decades, but the quality of the environment would decline because many developed sites would become crowded or deteriorated. Overall rural **use** would grow **104** percent by the fifth decade.

Roaded natural acres would increase **19** percent by the fifth decade because of timber management and road construction activities. These practices would improve access, but would also modify the natural setting to a greater degree than currently is the norm for most RN areas. Thus, even more than in the PRF and UNE alternatives, RN acres would exceed demand but would be of a lower quality for recreationists desiring natural-appearing surroundings. Use would continue to increase, though, and by the fifth decade would be **130** percent above present **use**.

Semi-primitive motorized and nonmotorized acreage would decrease because of increased roading and landscape modification. Because no areas would be designated for SPNM recreation outside **of** the Granite Chief Wilderness and the North Fork American Wild River, SPNM acres would be converted to roaded natural more quickly than in the PRF alternative. SPM and SPNM acres would decrease **60** and **41** percent, respectively. This diminishing land base would be insufficient to meet SPM and SPNM demand by the second decade. By the fifth decade, SPM **use** would thus decrease **28** percent because **of** the limited available acreage. SPNM **use** would be **6** percent higher than current **use** in the fifth decade, and would increase until reaching capacity.

RPA Alternative. Frfth-decade rural ROS class acres and **use** would increase **11** percent and **121** percent, respectively, due to increased ski area and recreation site development but not to the extent as the PRF, UNE, or CMD alternatives.

Roaded natural acreage would increase **20** percent by the fifth decade because **of** roading, harvesting, and development in SPM and SPNM acres. Use would increase **141** percent but would still not approach capacity. The natural quality of the RN environment would decline from current conditions as in the CUR alternative.

TABLE 4.27 - ACRES AND THOUSANDS OF RECREATION VISITOR DAYS (MRVD) USE BY RECREATION OPPORTUNITY SPECTRUM (ROS) FOR EACH ALTERNATIVE (MRVD/Acres) 1/

ROS	Decades	Existing	PRF	CUR	RPA	CMD	NMK	UNE
Rural	1 Use Acres	2,272.6 43,626	2,890 53,753	2,628 43,630	2,547 41,775	2,890 45,807	2,496 40,090	2,890 53,753
	2 Use Acres		3,557 58,152	3,051 43,630	3,122 44,703	3,557 47,988	3,014 41,454	3,557 58,152
	3 Use Acres		4,211 61,086	3,366 43,630	3,686 46,625	4,211 50,169	3,550 42,732	4,211 61,086
	4 Use Acres		4,849 63,133	3,699 43,630	4,143 48,315	4,849 52,350	4,083 43,861	4,849 63,133
	5 Use Acres		5,425 65,108	4,055 43,630	4,384 43,315	5,425 54,533	4,522 44,926	5,425 65,108
Roaded Natural	1 Use Acres	1,5728 545,777	1,941 563,313	2,145 562,939	2,214 566,571	1,943 564,056	1,936 561,759	1,941 563,313
	2 Use Acres		2,301 566,985	2,554 594,126	2,684 599,783	2,324 593,007	2,273 579,769	2,288 583,485
	3 Use Acres		2,609 590,371	2,873 609,926	3,146 620,961	2,724 616,326	2,590 586,004	2,594 586,871
	4 Use Acres		2,904 589,782	3,242 634,136	3,493 635,871	3,115 632,545	2,885 586,004	2,887 586,282
	5 Use Acres		3,139 587,807	3,617 652,026	3,794 652,371	3,431 642,562	3,121 584,939	3,120 584,307
Semi-Primitive Motorized	1 Use Acres	1846 115,198	164 84,420	220 103,663	166 76,572	240 101,526	87 38,828	164 84,420
	2 Use Acres		147 67,450	199 83,426	132 53,121	218 81,324	56 21,396	155 70,950
	3 Use Acres		166 67,450	188 73,174	108 38,132	186 64,778	42 13,883	175 70,950
	4 Use Acres		185 67,450	157 57,464	84 27,380	163 52,833	18 12,754	194 70,950
	5 Use Acres		200 67,450	132 45,855	54 16,653	143 44,922	21 12,754	210 70,950
Semi-Primitive Nonmotorized	1 Use Acres	162 89,773	199 92,888	200 84,162	266 109,456	178 82,985	329 153,697	199 92,888
	2 Use Acres		203 81,787	196 73,192	270 96,767	183 72,055	385 151,755	203 81,787
	3 Use Acres		217 75,467	194 67,844	280 88,656	190 63,101	456 151,755	217 75,467
	4 Use Acres		245 74,009	181 59,144	284 82,828	202 56,641	540 151,755	245 74,009
	5 Use Acres			74.009 74.009	72,863 72,863	77,035 77,035	52,357 52,357	151,755 151,755
Primitive	1-5 Use Acres	0 0	0 0	0 0	0 0	0 0	0 0	0 0

1/ For developed and dispersed recreation, doesn't include ski RVD's & acres on private land

Semi-primitive motorized and nonmotorized acreages would decrease **86** and **14** percent, respectively, because acres would be converted to RN. Because the Grouse Lakes, Castle Peak, Loch Leven, and Snow Mountain areas would be managed for SPNM recreation, SPM acres would be reduced more than SPNM acres. Projected SPM demand would not be met in the first decade and thereafter, SPNM demand would be met until the fifth decade but not thereafter. The limited SPM land base would constrain use to **71** percent below current use and use would level off at this capacity. Semi-primitive nonmotorized use would increase **93** percent by the fifth decade until the diminishing SPNM land base counteracts the growing demand. Use would continue to grow until capacity limits are met.

CMD Alternative. Rural acres would increase **25** percent by the fifth decade. Downhill ski facilities and developed recreation sites would expand to accommodate demand. Use would increase **173** percent, the same as the PRF and UNE alternatives, but use would be concentrated on fewer acres.

Roaded natural acreage would increase almost as much as the CUR and RPA alternatives because of a high level of new road construction and timber harvesting. RN fifth-decade acre capacity would increase **18** percent. RN use would be between the PRF/UNE and CUR/RPA alternatives, **118** percent of current use by the fifth decade, because of the large roaded natural land base and diminished semi-primitive motorized and nonmotorized capacity. The dispersed recreation environment would be intensively modified, thereby reducing natural-setting opportunities and qualities. Vehicular access would be greatly increased over current levels.

Like the CUR alternative, the CMD alternative places little emphasis on maintaining semi-primitive settings beyond those provided by the Granite Chief Wilderness or the North Fork American Wild River. Thus, both semi-primitive motorized and nonmotorized acreages would decline significantly, by **61** and **41** percent, respectively, from current levels by the fifth decade. These decreasing acreages would be inadequate to meet SPM demand in the second decade and SPNM demand in the first decade. Fifth-decade use levels would decrease 20 percent in the SPM class and would increase **36** percent for SPNM. Use would continue to grow beyond the fifth decade for SPNM until it reached the capacity for those acres.

NMK Alternative. Fifth-decade rural acreage would increase only **3** percent. Developed recreation and ski facilities would be improved and expanded (except where conflicts occur with amenity values) to enhance the recreation experience. In addition, the forest would remain somewhat naturally appearing, thereby more consistently maintaining high quality settings than would the PRF, CUR, RPA, and CMD alternatives. Use would increase 99 percent by the fifth decade (somewhat less than the PRF and UNE alternatives' increase) because less use would be displaced to rural from less developed ROS classes.

As in all alternatives, new roading would increase roaded natural acreage. Less timber harvesting and roading would occur than under all other alternatives. The RN acres would increase only 7 percent. This RN acreage would meet demand, would remain mostly in a natural, near-natural, or somewhat natural condition, and thus would provide a higher quality environment for recreation than the more commodity-oriented alternatives. Fifth-decade use would be **98** percent above current use.

Because many areas (the North Fork of the American River, East Yuba, West Yuba, Duncan Canyon, Middle Yuba, Bald Mountain, North Lafayette, Castle Peak, Grouse Lakes, North Fork Middle Fork of the American River, and Lakes) would be designated semi-primitive nonmotorized in this alternative, most of the RN acreage increase would come from semi-primitive motorized areas. Thus, while the SPNM acreage would increase, SPM acreage would be reduced **89** percent by the fifth decade through conversion to the SPNM and RN classes. SPNM acreage would be 69 percent larger by the fifth decade than the current amount because of the designation and management of large areas as SPNM. With minimal SPM acreage, capacity would fall short of demand by the first decade and use would decline by **89** percent by the fifth decade. Much of this displaced SPM demand would be converted to SPNM use. SPNM use would increase **291** percent above current use by the fifth decade and would exceed projected demand (**378** MRVD's) by **256** MRVD's. The high quality SPNM recreation areas would be maintained in several large, viable blocks (rather than small, randomly scattered parcels such as in the CUR and CMD alternatives) and would, by their own merits and because of the shortage of useable SPM environs, attract more use than in any other alternative. Use would level off in the fifth decade at 634 MRVD's as this is about the capacity for the total SPNM acres.

Figure 4.13: Recreation Opportunity Spectrum - Rural by the Fifth Decade

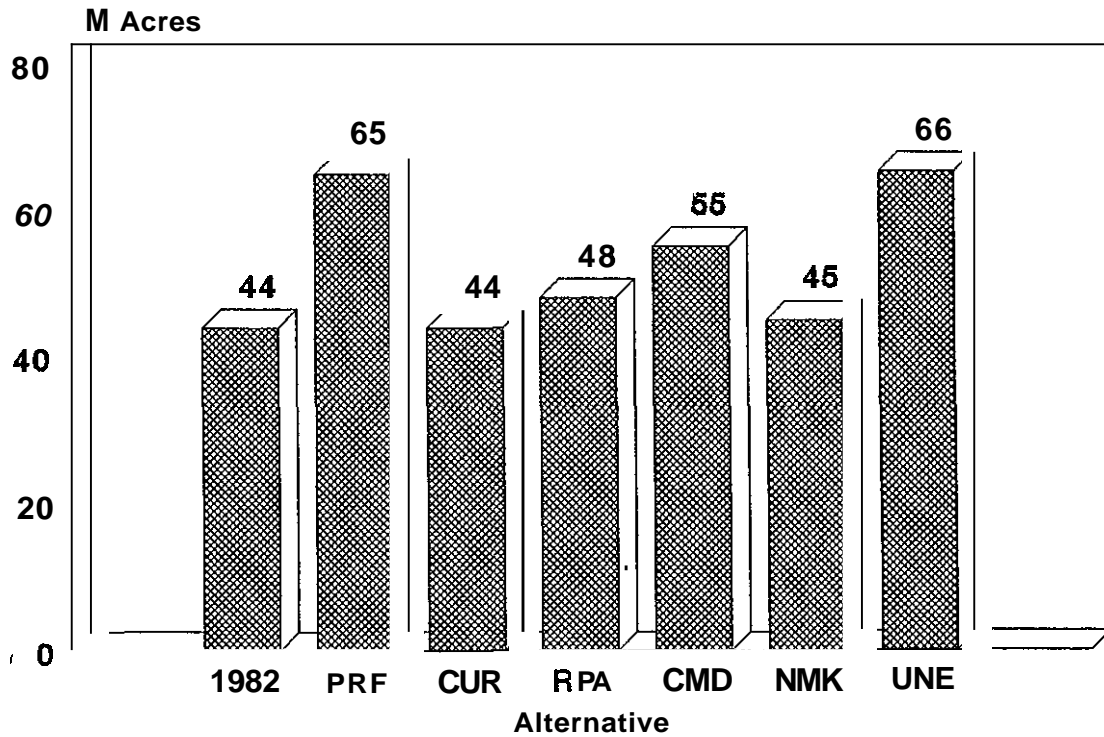


Figure 4.14: Recreation Opportunity Spectrum - Roaded Natural by the Fifth Decade

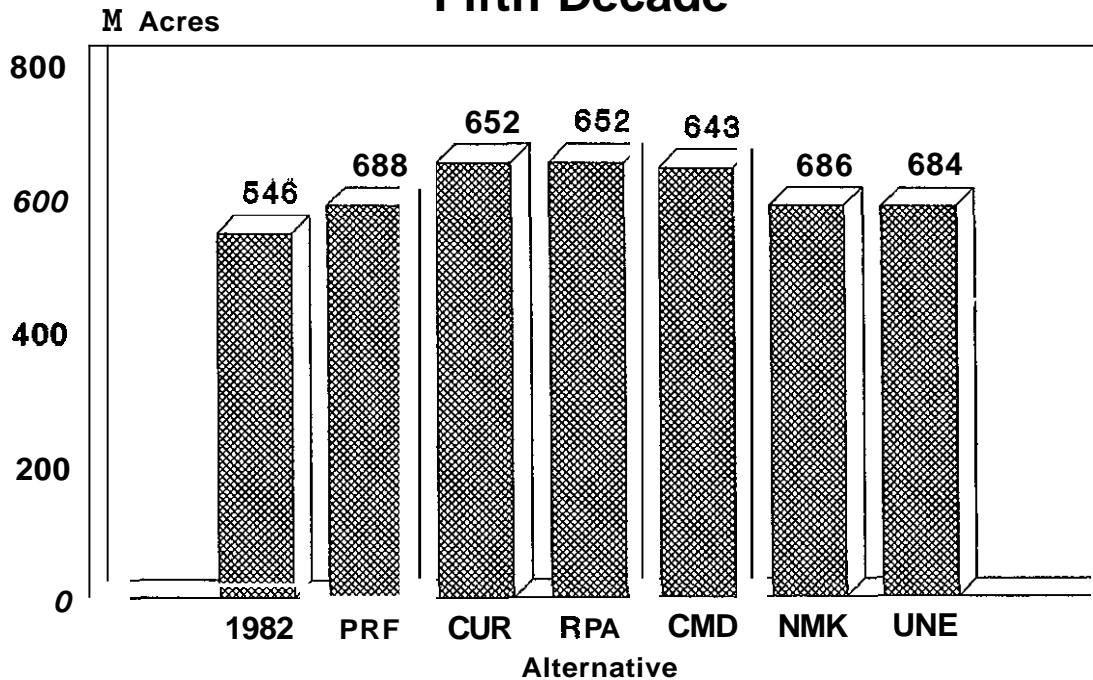


Figure 4.15: Recreation Opportunity Spectrum - Semi-primitive Motorized by the Fifth Decade

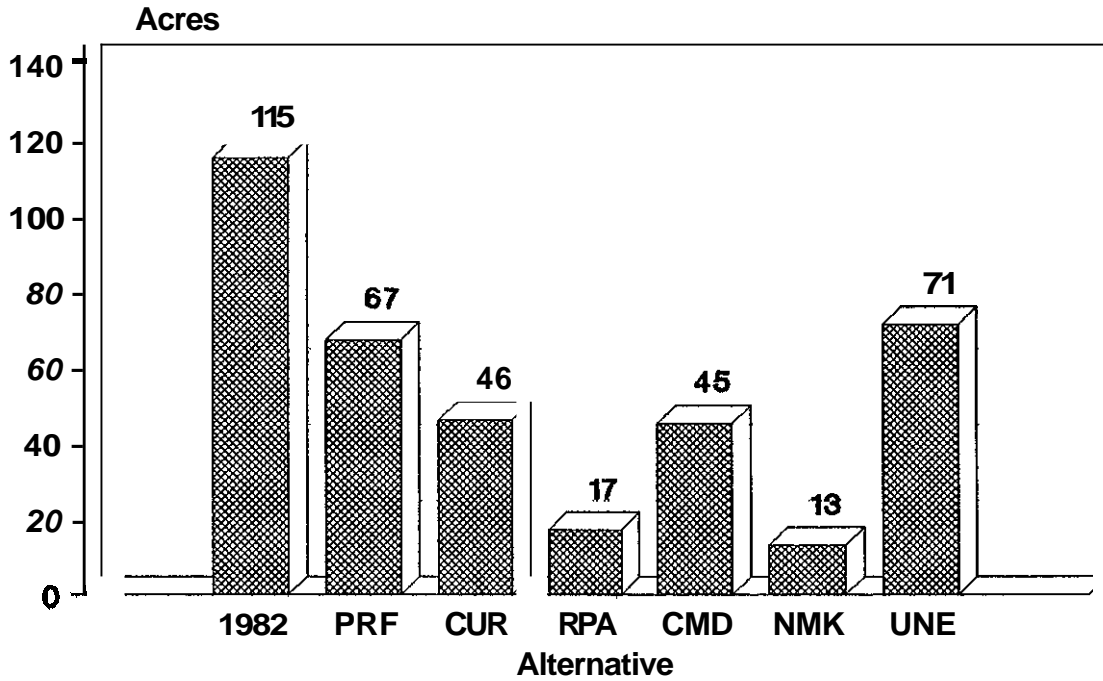
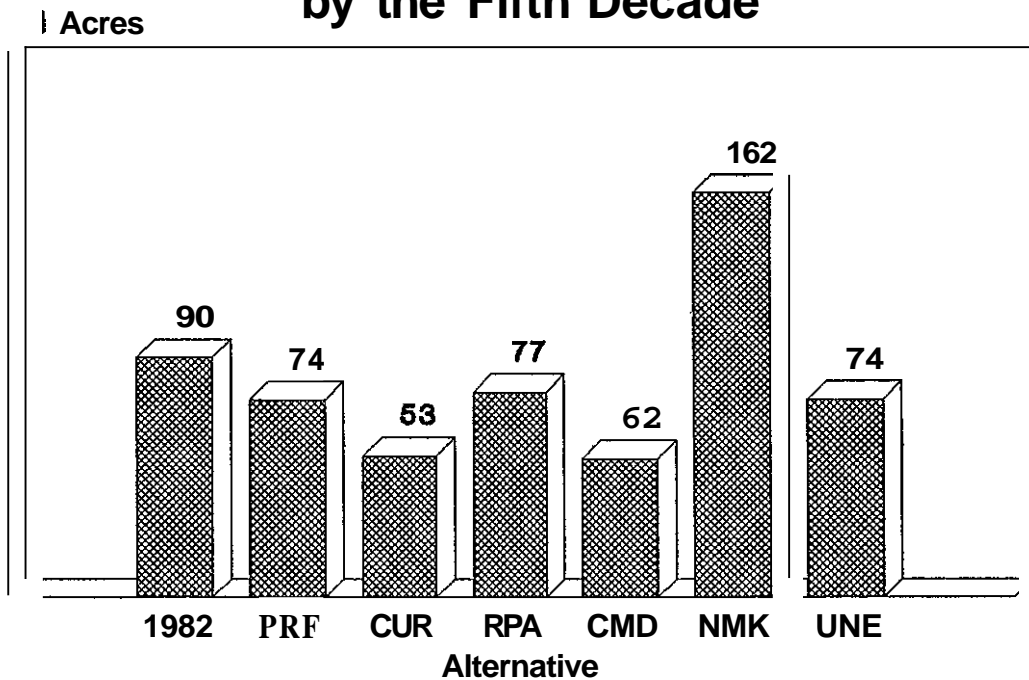


Figure 4.16: Recreation Opportunity Spectrum - Semi-primitive Nonmotorized by the Fifth Decade



RIPARIAN AREAS

Riparian areas include wetlands, floodplains, the riparian and aquatic ecosystems, and the first 100 feet of streamside management zones (SMZ's) on either side of perennial streams. Because there is an overlap between riparian areas and SMZ's, and because the purpose of SMZ's is ultimately to protect riparian area values, they are discussed together.

Impacts to the estimated 32,000 acres of wetlands and riparian ecosystems, and the **4,600** acres of floodplains associated with large (Class I) streams, would not differ significantly by alternative. These areas are identified during project-level planning. Appropriate best management practices (BMP's - see S&G 50 and Appendix E in the Forest Plan) are applied to minimize direct and indirect disturbances. For example, BMP 7.3 specifically addresses the protection of wetlands. Impacts to these components would be localized and minor.

The potential to affect riparian areas/SMZ's and related values correlates with (1) the acreage of regeneration harvest and associated activities on steep ground (slopes over 30 percent), and (2) the degree of protection provided to streamside zones.

In general, the risk that a recurrent storm event would result in adverse impacts to riparian-dependent resources increases with the amount of regeneration cutting, road building, and site preparation on steep ground. It is normally possible to protect SMZ's and the aquatic ecosystem from logging operations on flatter slopes (0 to 30 percent). Maintaining riparian areas and SMZs on steeper slopes has a much higher risk of failure largely due to post-harvest activities.

The risk to riparian-dependent resources also increases with the amount of activity scheduled within riparian areas/SMZ's. Forest S&G's 46 and 47 and Plan Appendix F are designed to maintain water quality and other riparian values by maintaining vegetation and an effective ground cover in riparian areas/SMZ's. These standards are more restrictive than the minimum management requirements (MMR's) because recent experience has demonstrated that the Forest has not always been able to protect riparian areas and SMZs when timber volumes have been scheduled from these zones. Some of the major differences in riparian/SMZ protection offered between the Forest Plan direction (S&G's 46 and 47, and Appendix F) and the MMR are: 1) the Plan provides for SMZ protection adjacent to certain intermittent and ephemeral streams as well as perennial streams while the MMR only recognizes perennials, 2) the Forest Plan allows for variable width SMZ's, which may be greater than 100 feet, whereas the MMR recognizes a fixed 100-foot zone along only perennial streams; 3) the Forest Plan schedules only incidental timber yields from perennial SMZ's for such things as cable logging corridors and road crossings, whereas the MMR schedules several million board feet per year in these areas; and, 4) the Forest Plan clearly states that riparian-dependent resources take precedence over nondependent resources such as timber in riparian areas/SMZ's, whereas the MMR, with its scheduled yield, is not restrictive. In essence, the risk involved in protecting SMZ's decreases dramatically as planned timber harvest is reduced in the SMZs. Because the MMR schedules several million more board feet of timber output than the Forest S&G's would allow in SMZ's, this built-in conflict between riparian area-dependent resource values and commodity output would likely result in continued failures.

Figure 4.17 displays the total number of acres to be regenerated in the first decade on slopes over 30 percent. The base for comparison is the **1977-87** period (**14,400** acres). Figure 4.18 displays the projected increases in regeneration acres on slopes over 30 percent as percentages, again using the **14,400** acres for **1977-87** as a base; percentage increases are shown for the first decade and for the first five decades.

In comparing alternatives and projecting the potential impacts on riparian areas and water quality, both the first-decade activity and the five-decade activity on slopes over 30 percent were considered as were riparian area/SMZ guidelines. More weight is attached to the first-decade activities since they would be scheduled immediately upon adoption of the Forest Plan. Plan updates would allow for changes in harvest levels on steep ground in later decades if warranted by monitoring; therefore the five-decade average carries less weight. The more restrictive riparian area/SMZ direction applies to the PRF, NMK, and UNE alternatives; the MMR applies to the CUR, RPA, and CMD alternatives.

Alternative **PRF**. This alternative has a first-decade regeneration harvest of **23,500** acres, which is 63 percent greater than the **1977-1987** period; the average decade harvest for the first five decades is about **52** percent greater than the **1977-87** level. This alternative incorporates the more restrictive Forest S&G's for riparian areas/SMZ's.

The potential to damage riparian areas/SMZ's and the aquatic ecosystem would be moderate based on the overall high (first-decade)/high (five-decade) amount of activity on steep ground, and the more restrictive Tahoe NF riparian area/SMZ guides

Alternative **CUR**. This alternative has a first-decade regeneration harvest of **22,900** acres, which is **59** percent greater than the **1977-1987** period; the average decade harvest for the first five decades is about **69** percent greater than the **1977-87** level. This alternative incorporates only the MMR for riparian areas.

The potential to damage riparian areas/SMZ's and the aquatic ecosystem would be high based on the overall high (first-decade)/high (five-decade) amount of activity on steep ground, and the less restrictive MMR for riparian areas.

Alternative **RPA**. This alternative has a first-decade regeneration harvest of **34,400** acres, which is **139** percent greater than the **1977-1987** period; the average decade harvest for the first five decades is about **97** percent greater than the **1977-87** level. This alternative incorporates only the MMR for riparian areas.

The potential to damage riparian areas/SMZ's and the aquatic ecosystem would be very high based on the overall extreme (first-decade)/high (five-decade) amount of activity on steep ground, and the less restrictive MMR for riparian areas.

Alternative **CMD**. This alternative has a first-decade regeneration harvest of **33,700** acres, which is **134** percent greater than the **1977-1987** period; the average decade harvest for the first five decades is about 65 percent greater than the **1977-87** level. This alternative incorporates only the MMR for riparian areas.

The potential to damage riparian areas/SMZ's and the aquatic ecosystem would be high to very high based on the overall extreme (first-decade)/high (five-decade) amount of activity on steep ground, and the less restrictive MMR for riparian areas.

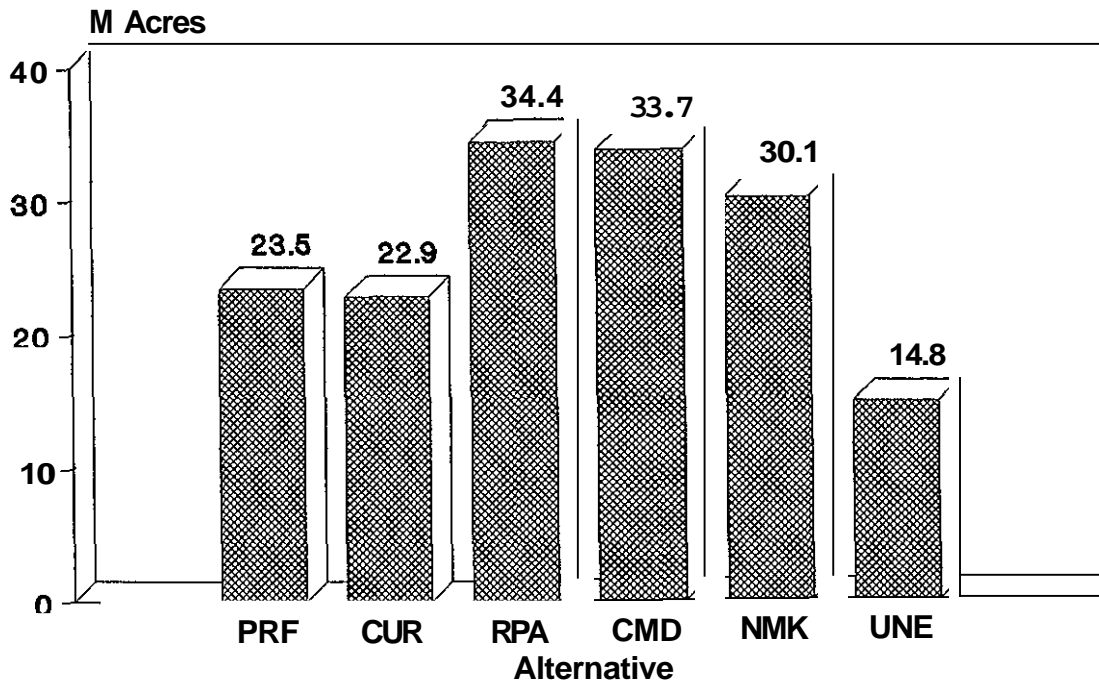
Alternative **NMK**. This alternative has a first-decade regeneration harvest of **30,100** acres, which is **109** percent greater than the **1977-1987** period; the average decade harvest for the first five decades is about 42 percent greater than the **1977-1987** level. This alternative incorporates the more restrictive Forest S&G's for riparian areas/SMZ's.

If fuels treatment were treated similarly as in the other alternatives, then under this alternative the potential to damage riparian areas/SMZ's and the aquatic ecosystem would be moderate to high based on the overall high (first-decade)/moderate (five-decade) amount of activity on steep ground, and the more restrictive Tahoe NF riparian area/SMZ guides. This alternative treats fuels differently than the other alternatives in that significantly more ground cover would be retained; when this factor is considered, this alternative would be comparable to the PRF alternative for riparian area/SMZ protection.

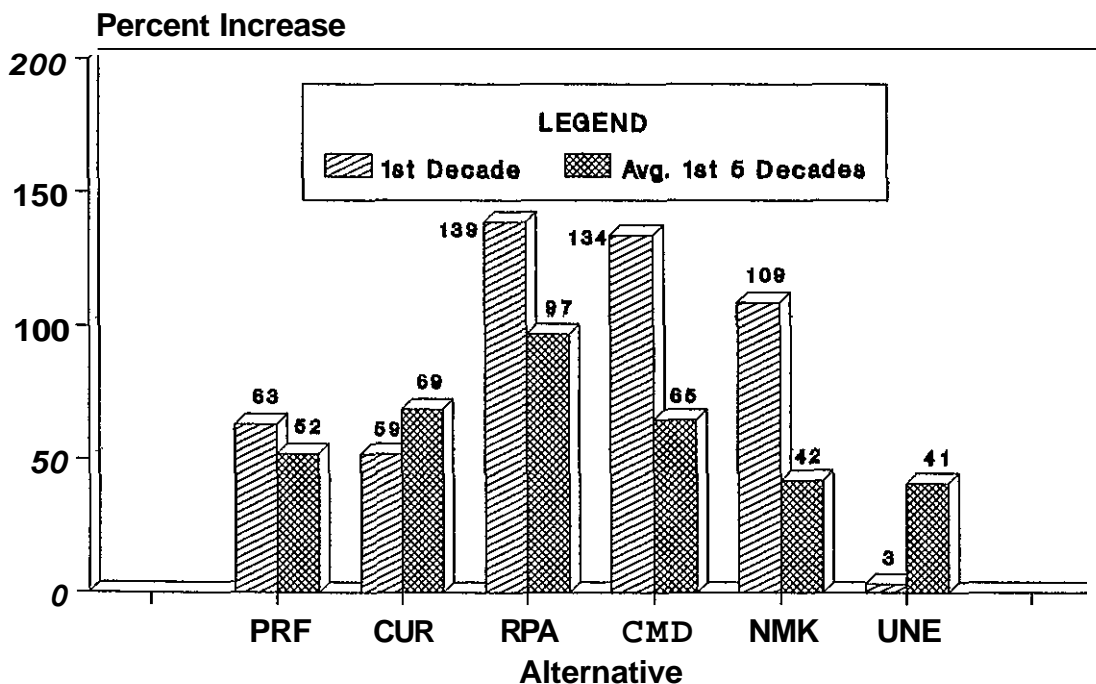
Alternative **UNE**. This alternative has a first-decade regeneration harvest of 14,800 acres, which is 3 percent greater than the **1977-1987** period; the average decade harvest for the first five decades is about 41 percent greater than the **1977-87** level. This alternative incorporates the more restrictive Forest S&G's for riparian areas/SMZ's.

The potential to damage riparian areas/SMZ's and the aquatic ecosystem would be low based on the overall low (first-decade)/moderate (five-decade) amount of activity on steep ground, and the more restrictive Tahoe NF riparian area/SMZ guides.

**Figure 4.17: Total First-Decade
Regeneration Acres on Slopes
Greater than 30%**



**Fig. 4.18: Potential Percent Increase in
Regeneration Acreage on Slopes Greater
than 30% Compared to the 1977-87 Period**



SENSITIVE PLANTS

To maintain the present populations of sensitive plant species, the TNF developed sensitive plant program standards and guidelines (see Forestwide S&G 23 in Chapter V of the Forest Plan). They assure that sensitive plant species are considered in all Forest projects. Sites not identified (obscured by heavy vegetation, poor flowering year, etc.) during project inventory, however, could be adversely affected.

To assess the consequences of the alternatives on sensitive plant species, effects were evaluated in terms of risk (high, moderate, and low).

Ground-disturbing activities, such as road building and timber harvesting, constitute a large percentage of forest management activities and provide a good measure to reflect and judge the effects of the various alternatives. The risk to sensitive plants and their habitats was determined by the number of acres proposed for ground-disturbing activities and the number of sensitive plant **sites** which inadvertently could be missed during preproject review. High risk represents an increased chance of disturbance, and low risk represents a decreased chance in relation to the other alternatives.

Alternatives PRF, CUR, RPA, CMD, and UNE would have the highest probable risk of disturbance. Alternative NMK would have the lowest risk of disturbance.

SOILS

Introduction

Land management activities have the potential to impact soils in several ways. Road construction is an example of a direct effect, *i.e.*, where soil is taken out of biotic or vegetative production; an intense wildfire, caused by excessive **fuel** loading, could have an indirect effect on the soil. The greatest potential to affect soil productivity, however, is the cumulative effect of many independently insignificant activities over long periods of time. This effect can be addressed by examining the effects that land management activities have on the following three soil characteristics: (1) soil depth, or thickness, (2) soil porosity, and (3) soil organic matter. Soil productivity—the inherent capacity to support the growth of specified plants, plant communities, or a sequence of plant communities—is dependent upon these basic soil characteristics.

Loss of soil depth can occur when management activities, such as broadcast burning or tractor piling to treat logging slash, leave insufficient soil cover to protect the soil from accelerated erosion. The incremental loss of soil by sheet erosion is a cumulative effect because significant soil loss over a rotation is generally too small to result in a measurable loss of tree growth. Because soil development for replacement is measured in thousands of years, soil loss is considered an irreversible effect.

Soil porosity may be reduced by operating heavy equipment when soil strength is low, causing compaction or puddling. The loss in porosity can cause a significant short-term loss in soil productivity. Although this effect can last for decades, recovery will occur over time. Tillage is an effective measure to accelerate the recovery of soil porosity.

Organic matter loss can occur through activities such as broadcast burning, tractor piling and burning logging slash, and other fuel reduction practices. The loss of organic matter can result in a short-term loss in soil productivity, although the effect may also be cumulative because most benefits of maintaining soil organic matter and large woody material accrue to future rotations. Lost organic matter can be replaced over time—if the soil can still support the growth of higher plants—but this could take several hundreds of years.

Appendix H, Soil Productivity, contains a more detailed discussion of how long-term soil productivity is related to these three soil characteristics. In the remainder of this section, the terms "soils" and "soil resource" are used interchangeably with long-term soil productivity.

Mitigation of Effects

The direct and indirect effects on soils associated with road construction, developed recreation sites, etc., are considered dedicated uses not dependent on soil productivity, and will not be mitigated. These effects, and the indirect effects of livestock grazing and wildfires, are disclosed in the comparison of alternatives that follows. The cumulative effects of management practices on long-term soil productivity will be mitigated by application of Forestwide Standard and Guideline (S&G) 55, Maintain Soil Productivity. This S&G will be applied to all alternatives and is considered essential to meet the minimum management requirement to avoid "... significant or permanent impairment of the productivity of the land ..." (36 CFR 219.27, part A). The S&G was developed to maintain long-term soil productivity by limiting incremental and cumulative losses of the three characteristics basic to soil productivity: (1) soil depth, (2) soil porosity, and (3) soil organic matter. To maintain soil depth, soil cover standards were developed to prevent soil loss by erosion from exceeding the rate of soil formation. The standard for soil porosity limits the loss of porosity to levels that would not affect forest stand growth. The guidelines for forest duff and large woody material maintain sufficient organic matter to provide essential habitat for numerous organisms important in nutrient cycling and to provide a reserve of nutrients for the future. Appendix H, Soil Productivity, contains a detailed discussion on how S&G 55 was developed and how it provides protection to the soil resource.

Unavoidable Effects

Unavoidable direct effects on soils occur when the soil is displaced or severely altered by constructing roads and trails, grading ski runs, developing campgrounds, developing mining areas, or by unrestricted off-highway vehicle traffic. There is also the unavoidable risk that the Forestwide S&G to mitigate cumulative effects on soils will not be 100-percent effective. There are several reasons for this. First, it is unlikely that the S&G would be perfectly implemented on every project; second, the S&G includes assumptions about the probability of natural events, i.e., storm intensity in relationship to soil erosion, third, measures to correct soil damage where the standards are not met are unlikely to be 100-percent effective, or for some valid reason may not be implemented; and, finally, the standard is based on current knowledge and understanding of the factors that affect soil productivity; additional knowledge and understanding may prove the standards inadequate. Monitoring the effectiveness as well as the implementation of S&G 55 will contribute to this knowledge and understanding, and will provide feedback for any necessary revisions.

Indicators of Effects

Indicators of unavoidable direct effects to the soil resource include acres developed for downhill skiing (Table 4.25), acres in developed campgrounds, miles of trails, (Table 4.14), miles of new road construction (Table 4.13), acres open to unrestricted OHV travel (Table 4.26), and acres withdrawn from mineral entry and leasing (Table 4.21). Acres withdrawn from mineral entry and leasing is an indicator of the area likely to be disturbed by mining activity; the more acres withdrawn, the lower the probability of disturbance. Indicators of indirect effects include AUM production (Table 4.22), and the risk of severe wildfire that could damage the soil. The risk of severe wildfire increases in proportion to the increase in timber harvest on slopes greater than 30 percent. This relationship is based on the assumption that more residue is likely to be left on the steep slopes, partly in response to other S&G's, and partly because fuel management is more difficult on steeper slopes.

The indicator used to analyze the risk of unavoidable adverse cumulative effects of timber management activities on soils is the Index of Relative Risk of Cumulative Effects on Long-Term Soil Productivity (Table 4.28). This index assumes that the relative risk of cumulative effects on soils is a function of the acres treated with soil-disturbing timber management activities. The index was developed for each alternative by: (1) listing all timber treatments with the potential to affect one or more of the three soil characteristics basic to soil productivity (depth, porosity, and organic matter); (2) assigning a weight for the potential impact of each treatment on each of these three soil Characteristics; (3) multiplying treated acres by the weighting factors for each treatment; and (4) dividing the total treated acres by the totals for the CUR alternative, which is considered the baseline for analysis. All treatments for a full rotation were listed, including harvest, site preparation, plantation release, and thinning. For each soil Characteristic, weight was relative to the most

severe treatment. For example, tractor piling was the reference for porosity, with a value of 1.0, thinning with a feller-buncher was assigned a weight of 0.6. Because some acres had multiple treatments, and some treatments had an impact on more than one soil characteristic, the totals resulting from this analysis were treated acre equivalents, and are useful only for comparing alternatives.

The direct, indirect, and cumulative effects on soils discussed in this section are on-site effects that apply only to National Forest System lands; they do not affect the soils of adjacent or intermingled private lands. Assuming a strong effort to implement S&G 55, Soil Productivity, and on-going monitoring of its implementation and effectiveness as described in Forest Plan Appendix K, Soil Monitoring, the risk of not maintaining long-term soil productivity under Alternative CUR should be relatively low.

Effects Common to All Alternatives

The acres developed for downhill skiing (Table 4.25) and acres in developed recreation sites are relatively small and would not differ significantly from Alternative CUR. The miles of trails open to OHV use when soil damage is likely to occur (Table 4.26) would be significantly higher than Alternative CUR in all alternatives, but differences among alternatives would not be significant. The area open to OHV traffic under all alternatives would be about half of Alternative CUR and would not differ significantly among alternatives. The effects of ski area development, developed recreation sites, and OHV use on the soil resource would be minor, largely because the acres affected would be small.

Comparison of Alternatives

Alternative CUR. New road construction would be a direct effect on the soil resource because it removes land from production. However, a transportation system is needed to manage the Forest and, relative to the amount of roads already in place, the acres of new construction would be relatively low (a little over 300 miles or 1,200 acres in the first 50 years). Although the amount of land closed to mineral entry and leasing would be low, the amount of land that would lose its biotic or vegetative production potential because of mining activity would be relatively small. Also, many land-disturbing impacts would likely occur on old diggings where the soil has already been severely altered. The livestock grazing represented by AUM production would cause some soil loss by erosion due to a loss of cover by overgrazing and bedding grounds. The areas affected, however, would be relatively small and would be monitored to develop soil cover standards and to determine if changes in current management would be needed. The risk of severe wildfire under this alternative would be moderate because of the large amount of timber management on slopes greater than 30 percent. The indices of risk in Table 4.28 serve as a reference for comparison with the other alternatives. With the implementation of Forestwide S&G 55, the risk index of 100 for this alternative would be considered a low risk of cumulative effects on long-term soil productivity.

TABLE 4.28 - INDEX OF RELATIVE RISK OF CUMULATIVE EFFECTS ON LONG-TERM SOIL PRODUCTIVITY^{1/}

	PRF	CUR	RPA	CMD	NMK	UNE
Soil Porosity	100	100	123	160	5	100
Soil Erosion	78	100	126	77	50	61
Soil Organic Matter	86	100	127	116	10	75
Overall Index	93	100	124	134	13	87

^{1/} Acres treated with soil-impacting activities (weighted for degree of impact) divided by acres treated under CUR alternative. Average for decades one through five.

Alternative PRF. Miles of new road construction, AUM production, and area closed to mineral entry and leasing in this alternative would not differ significantly from Alternative CUR. These direct and indirect effects would not differ significantly from Alternative CUR. The indirect effect of the risk of severe wildfire, however, would be significantly lower than Alternative CUR because fewer acres with slopes over 30 percent would be allocated to timber management. The risk index for cumulative effects would be the same as Alternative CUR for porosity, significantly less than Alternative CUR for organic matter, but significantly lower for soil erosion, – a reflection of fewer acres of timber management on steep slopes. The overall risk index would be slightly lower than Alternative CUR. The overall risk to the soil resource under this alternative would be low.

Alternative RPA. Miles of new road construction, AUM production, area closed to mineral entry and leasing, and risk of severe wildfire in this alternative would not differ significantly from Alternative CUR. These direct and indirect effects would not differ significantly from Alternative CUR. The risk index of cumulative effects for all three soil characteristics and for the overall index would be significantly higher for this alternative than for Alternative CUR. The overall risk to the soil resource under this alternative would be moderate.

Alternative CMD. Miles of new road construction, AUM production, and risk of severe wildfire in this alternative would not differ significantly from Alternative CUR. The area closed to mineral entry and leasing would be slightly higher than under Alternative CUR. These direct and indirect effects would not differ significantly from Alternative CUR. The overall risk index for cumulative effects, however, would be significantly higher than under Alternative CUR. The high risk index values for porosity and for organic matter, and lower risk index for erosion, reflect the large number of acres of tractor ground under timber management in this alternative. Although indices for porosity, organic matter, and the overall index would be significantly higher than under Alternative CUR, the lower index for erosion—the irreversible effect—would reduce the overall risk to the soil resource under this alternative to moderate.

Alternative NMK. Miles of new road construction would be slightly lower, and AUM production significantly lower under this alternative than under Alternative CUR. The area closed to mineral entry and leasing would be significantly higher than under Alternative CUR, which would reduce the probability of disturbance by mining activity. These direct and indirect effects on the soil resource would be significantly lower than under Alternative CUR. The risk of severe wildfire would be slightly higher, but not significantly different from Alternative CUR. This slightly higher risk would result from the relatively large area of steep slopes allocated to timber management, and from higher levels of organic residues left after harvest under this alternative. All risk indices for cumulative effects on the soil resource would be significantly lower than under Alternative CUR, which reflects the special emphasis under this alternative to leave most organic residues in place, and to restrict soil-disturbing activities such as tractor piling or broadcast burning. The risk index for erosion would not be as low as might be expected because of the relatively large allocation of steep slopes to timber management. The overall risk to the soil resource for this alternative would be very low.

Alternative UNE. Miles of new road construction and AUM production under this alternative would not differ significantly from Alternative CUR. These direct and indirect effects would not differ significantly from Alternative CUR. There would be slightly more area withdrawn from mineral entry and leasing, and the risk of severe wildfire would be significantly lower than Alternative CUR. The risk index for cumulative effects on porosity would be the same as for Alternative CUR, a reflection of the large acreage allocated to timber management on slopes less than 30 percent. The significantly lower risk index for soil erosion is because most land on slopes greater than 30 percent would be in shelterwood management systems. The overall risk index under this alternative would be slightly higher than Alternative CUR and the overall risk to the soil resource would be low.

SPECIAL INTEREST AREAS AND RESEARCH NATURAL AREAS

Table 2 14 in Chapter 2 displays the assignments by alternative of each Research Natural Area and Special Interest Area. Appendix C provides a detailed analysis of the effects of either designating or not designating each area. The information below summarizes Appendix C. Under all alternatives, Babbitt Peak is recommended for establishment as an RNA and Placer County Big Tree Grove is designated as an SIA. Decisions to designate SIAs are made in this EIS process by the Regional Forester.

Alternative PRF. Three of the five Research Natural Areas are recommended for establishment by the Chief of the Forest Service. Basin Peak area is not recommended for RNA designation because of the area's small size. Mt. Lola is not recommended and it is likely that management activities would result in a loss of the botanical values of the area. Of the 17 Special Interest Areas, seven are recommended for designation. Those not recommended would be managed for different uses, and three would likely lose their distinctive values because of management activities.

Alternatives CUR and RPA. Babbitt Peak is the only recommended RNA. Management activities in the remaining areas would likely result in a loss of RNA values. Of the SIA's, only Placer County Big Tree Grove is recommended for designation. Approximately one-fourth of the remaining SIA's would lose their distinctive qualities because of management activities.

Alternative CMD. Babbitt Peak and Sugar Pine Point are recommended for RNA establishment. The remaining areas would have their botanical values reduced by timber harvesting and other management activities. Seven of the proposed SIA's are recommended in this alternative. Of the areas not recommended, only two, LMI Truckee River Terrace and San Juan Ridge, would likely have their special characteristics reduced by timber harvesting and other management activities.

Alternative NMK. All proposed RNA's and SIA's are recommended for establishment. All candidate areas would be managed and their special values protected.

Alternative UNE. Basin Peak and Mt. Lola are not proposed for RNA establishment. The botanical values of Basin Peak would not likely be lost; however, alpine ski area development would reduce the values associated with Mt. Lola. Seven of the 17 SIA's are recommended for establishment in this alternative. Of the remaining areas, only the LMI Truckee River Terrace and San Juan Ridge area would have their special values reduced or lost.

TIMBER

The effects of each alternative on the timber resource are analyzed using the following indicators:

- Amount of suitable forest land allocated to timber management, and the intensity of management on those lands

- Mix of silvicultural systems and relative efficiency of the timber program

- Long-term harvest, growth, and inventory.

- Eastside pine harvest.

- Furbearer (pine marten, fisher, and Sierra Nevada red fox) habitat.

Landbase and Intensity of Management

Land available for timber management ultimately limits the productive capability of the Forest because an upper limit to the per acre yield always exists even at the highest intensities. The land tentatively suited for timber production was determined following a process described in Chapter 2 and in Appendix K. The landbase used for regulated timber management by alternative is listed in Tables 4.29 and 4.30.

TABLE 4.29 - LANDBASE USED FOR REGULATED TIMBER MANAGEMENT BY ALTERNATIVE

ALTERNATIVE	SUITABLE ACRES	PERCENT OF CAS LANDS*
PRF	528,474	84
CUR	604,835	96
RPA	580,764	92
CMD	591,944	94
NMK	450,327	72
UNE	528,536	84

TABLE 4.30 - ACRES OF FOREST LAND CAPABLE, AVAILABLE, AND SUITED FOR TIMBER PRODUCTION IN EACH ALTERNATIVE (ACRES) 1/

	PRF	CUR	RPA	CMD	NMK	UNE
FOREST LANDS	681,599	681,599	681,599	681,599	681,599	681,599
FOREST LAND NOT AVAILABLE	20,849	20,849	20,849	20,849	20,849	20,849
FOREST LANDS INCAPABLE	31,732	31,732	31,732	31,732	31,732	31,732
FOREST LAND PHYSICALLY NOT SUITED	0	0	0	0	0	0
FOREST LAND WITH INADEQUATE RESPONSE INFORMATION	0	0	0	0	0	0
TENTATIVELY SUITABLE FOREST LAND	629,018	629,018	629,018	629,018	629,018	629,018
NOT APPROPRIATE FOR TIMBER PRODUCTION	100,544	24,163	48,254	37,074	178,691	100,482
a Reservoirs	533	922	0	0	0	533
b Range	0	0	4,370	12,868	0	0
c Recreation	45,559	16,617	39,833	5,180	23,214	45,559
d Wildlife	42,652	0	333	10,898	45,118	42,652
e RNA's/SIA's	3,272	1,407	1,407	2,572	39,277	3,272
f Special Status 2/	6,528	5,237	2,311	5,556	2,562	8,466
g Soil Erosion	0	0	0	0	11,457	0
h Roadless	0	0	0	0	57,063	0
FOREST LANDS SUITED FOR TIMBER PRODUCTION	528,474	604,835	580,764	591,944	450,327	528,536
1. Special Cutting Practices	159,001	146,381	121,734	132,609	177,327	208,775
a Aesthetics	26,170	35,780	35,819	0	0	26,170
b Watershed	39,285	34,442	18,191	31,542	29,635	39,671
c Wildlife	9,215	3,547	2,345	0	7,431	9,205
d Recreation	20,422	22,817	17,146	9,148	0 3/	22,044
e Sensitive Watershed Lands	47,799	49,615	48,233	49,409	58,116	47,799
f Sensitive Plants	16,110	0	0	24,307	14,359	16,110
g Efficiency	0	0	0	18,203	67,786	47,776
2 Long Rotation Even-age Practices	126,944	121,219	80,806	150,377	121,629	96,863
a Aesthetics	77,339	98,419	53,606	78,506	10,048	76,216
b Watershed	6,444	2,696	9,814	6,601		6,444
c Wildlife	13,179	2,976	17,386	0	10,612	13,179
d Recreation	1,024	17,128	0	0		1,024
e Steep Slopes	0	0	0	49,371		0
f Efficiency	28,958	0	0	15,899	100,969	0
3 Group Selection Uneven-age	9,329	0	0	39,704		95,706
4 Short Rotation Even-age	233,201	337,235	378,224	269,254	151,371	127,192

Due to overlap, some amounts may actually be greater than acre shown. Totals include adjustments, research projects, electronic sites, and other special uses. About 151,000 acres of SPNM are included in 'Not Appropriate' above.

major groupings are accurate and not subject to overlap

TABLE 4.31 -ACRES RECEIVING INTENSIVE MANAGEMENT (FULL YIELDS, REDUCED YIELDS, UNEVEN-AGE)

ALTERNATIVE	ACRES OF INTENSIVE MANAGEMENT	PERCENT OF CAPABLE, AVAILABLE, AND SUITABLE FORESTLAND
PRF	369,474	70
CUR	458,454	76
RPA	459,030	79
CMD	459,335	78
NMK	273,000	61
UNE	319,761	60

Table 4.32 displays the suitable timber acres by each intensity category for each alternative.

TABLE 4.32 - SUITABLE TIMBER ACRES BY INTENSITY CATEGORY BY ALTERNATIVE

ALTERNATIVE	SPECIAL CUTTING	UNEVEN-AGE MANAGEMENT	REDUCED YIELDS EVEN-AGE MANAGEMENT	FULL YIELDS EVEN-AGE MANAGEMENT
PRF	159,001	9,329	126,944	233,201
CUR	146,381	0	121,219	337,235
RPA	121,734	0	80,806	378,224
CMD	132,609	39,704	150,377	269,254
NMK	177,327	0	121,629	151,371
UNE	208,775	95,706	96,863	127,192

An overall productivity index can be calculated by dividing the allowable sale quantity (ASQ) by the tentatively suitable lands (629,018 acres). This figure incorporates utilization of a potential landbase with management intensity. Alternatives with higher numbers indicate timber production closer to the potential of the Forest. Lower numbers are a result of landbase and management intensity tradeoffs for non-timber resource objectives such as wildlife habitat, recreation, visual quality, or watershed protection. Increases from the first to the fifth decade reflect increasing allowable sale quantity. Figures are expressed in board feet per acre per year. See Table 4.33.

TABLE 4.33 - PRODUCTIVITY INDEX BY ALTERNATIVE

ALTERNATIVE	1ST DECADE	5TH DECADE
PRF	226	226
CUR	276	306
RPA	275	315
CMD	286	313
NMK	167	167
UNE	176	182

Discussion

Alternatives CUR, RPA, and CMD are similar in overall environmental consequences. These three alternatives would have the largest suitable landbases, the largest percent of intensively managed forest land in the timber landbase, and the highest productivity index. In other words, these alternatives combine large, high quality timber landbases with high intensity management. Timber would be generally emphasized on capable, prime lands. One-half to two-thirds of the suitable land would be allocated to intensive, short rotation timber management. The highest yields would be produced by these alternatives, significantly above historical levels for the Tahoe NF. The RPA alternative would have the largest amount of acres assigned to full yields, but a smaller suitable landbase than Alternatives CUR or CMD because approximately 20,000 acres would be allocated to dispersed recreation (timber unsuitable). Alternative CMD would have the second largest total landbase, but the third largest amount of land in short rotation, even-age management, because 39,704 acres would be allocated to uneven-age management and 150,377 acres would be allocated to even-age, long rotation management. Alternative CUR would have the largest total landbase but also a relatively large amount of land in lower yield categories because it generally would match land allocations and management intensities in existing plans.

Alternatives NMK and UNE would be at the opposite end of the range of landbase and management intensity. Alternative NMK would have the smallest timber suitable landbase and the lowest productivity level. Alternative NMK essentially would operate on the existing, roaded landbase. Approximately 25 percent of the tentatively suited lands would be allocated to short rotation even-age management, but because herbicides would not be allowed reduced yields would be expected. Alternative UNE would have the lowest amount of land allocated to short rotation even-age management, but a total timber suitable landbase similar to the PRF alternative. Alternative UNE would allow the use of herbicides, but would have reduced yields because of the large amount of land under uneven-age management. Alternative NMK would have the lowest overall productivity and Alternative UNE has the second lowest. Alternatives NMK and UNE have a similar percentage of the total suitable forest land allocated to intensive timber management.

Alternative PRF lies between the CUR/RPA/CMD group and the NMK/UNE group in terms of suitable landbase, amount of land in the highest yield category, percent of intensively managed timber land, and overall timber productivity. Approximately one-half the suitable acres would be managed on a short rotation even-age basis. One-fourth of the suitable acres would produce marginal or incidental yields and the remainder of the suitable land would be managed on a long rotation or uneven-age management basis.

Mix of Silvicultural Systems and Efficiency

A comprehensive analysis of silvicultural systems is contained in Appendix L of this EIS. That analysis is the background for the present section and is suggested reading for better understanding of the summary contained here. Definitions to the technical terms can also be found in the glossary, which is in the Plan.

Efficiency in timber operations is most influenced by amount of land that must be accessed and treated for a given timber yield. Larger clearcuts (greater than 20 acres) tend to be the most efficient. Clearcuts in which a significant amount of residual understory trees, snags, and hardwoods are left are less efficient, as are shelterwood cuts (which involve two entries). Small openings scattered over a large area greatly reduce efficiency because of fixed costs associated with managing each opening, regardless of size. Uneven-age management requires large start-up investments because needed administrative systems, such as specialized inventories, are not currently in place. These needs would tend to make uneven-age management inefficient during the first decade of implementation. Uneven-aged management will be tested during the first decade to determine feasibility of implementing on a larger scale.

Table 4-34 Summarizes average annual harvest acres for the first decade by silvicultural practice for each alternative.

ALTERNATIVE	CLEARCUT	SEED STEP SHELTERWOOD	GROUP SELECTION
PRF	2,046	1,657	162
CUR	2,810	1,000	0
RPA	5,650	80	0
CMD	2,300	3,403	250
NMK	3,628*	1,263	0
UNE	257	1,481	1,605

ALTERNATIVE	ESTIMATED NUMBER OF OPENINGS/YEAR	ESTIMATED NUMBER OF OPENINGS/MMBF
PRF	300	2.9
CUR	220	1.6
RPA	330	2.3
CMD	450	2.9
NMK	1,630	22.0
UNE	900	10.0

efficient. Clearcutting would be emphasized and opening size not restricted below the Regional standard of 40 acres maximum. Implementation of such a large program increase might take several years. Areas under existing contracts would likely limit full implementation. Effects of the herbicide moratorium might cause difficulty in dispersing new openings.

Alternative CMD would also have a large program, but shelterwood cutting would be emphasized over clearcutting. There would be risk in creating large acreages of shelterwood if the market for the overwood removal step is not strong. The inability to remove overwood at the optimum time risks damage to the understory trees, increases growth loss, and delays entry into adjacent stands. Overwood removal of seed step cutting from the 1970's has recently begun. It is not clear how a large program of overstory removal will fare. A significant amount of group selection is scheduled in Alternative CMD. While some inefficiency associated with implementing the program would occur, it probably would not be necessary to restructure the standard timber management systems and organization. Group selection could occur on steep land, however, but there are major questions about the long-term success of uneven-age management on cable ground. Many of these questions are expected to be answered within the next decade as a result of new and ongoing silvicultural research.

Alternative PRF would have a higher proportion of shelterwood cutting to clearcutting than in the past decade. Depending on the market for overstory removal cutting, some risks of creating large acreages of stands needing overstory removal would exist. Clearcut openings would remain similar to present sizes, although most areas would contain patches of small residual trees, hardwoods, snags, and down logs. A small program of uneven-age management would be implemented in five timber compartments to gain information on the operational requirements of the system, possibly in preparation for a larger application in the future. Few adjustments would be needed to accommodate this level of uneven-age management.

Alternative NMK would have a relatively large clearcutting program, a large shelterwood program, and no uneven-age management. Efficiencies implied by this mix of silvicultural methods are counteracted by an opening size limit of three acres. Consequently, about six to seven times more openings per MMBF would have to be managed than under present conditions. Major administrative and organizational changes would have to occur to manage this number of openings. Funding for this intensity of management is questionable, particularly since the relatively cost-effective tool of herbicides would not be allowed. Management of such small units on steep lands would be extremely difficult and possibly infeasible in some cases. Costs are likely to be prohibitive on cable ground, particularly in the red fir and eastside pine forest types where the market has not been strong.

Alternative UNE would have a very small clearcutting program, a large shelterwood program (on steep ground), and a very large group selection program on tractor ground. There would be a four- or five-fold increase in the number of openings per MMBF from the present. Major organizational and administrative changes would have to be made to implement uneven-age management as the predominant silvicultural system on the Forest. There would be large start up costs. The shelterwood program would be very costly. The eastside pine and red fir types might not support regeneration costs for both shelterwood and group selection. Timely overstory removal would depend on market conditions, and the situation would be made more uncertain by low volumes per acre on cable ground.

Long-term Harvest, Growth, and Inventory.

Figures 4.19, 4.20, 4.21, and 4.22 show the long-term levels and trends of harvest, growth, inventory, and long-term sustained yield capacity (LTSYC), respectively, for each alternative. Growth, expressed as percent of the long-term sustained yield capacity, is shown for the fifth and last decades of the 150-year planning horizon. Alternatives at or above 90 percent of LTSYC after 15 decades have most stands growing near their potential within their yield or intensity class. Long-term harvest, growth, inventory, and LTSYC are expressed in cubic feet. Cubic feet is a uniform measure over time and is not sensitive to changes in board foot/cubic foot ratios. The current Forestwide BF/CF ratio is 6.5, but would change over time under different scenarios of conversion of older wild stands to younger managed stands.

In general, an inventory pattern that shows a sharp decrease in the first few decades, then recovery and a leveling off for the rest of the planning horizon, indicates efficient use of the inventory for timber production. Normally there would be a growth pattern of a slight drop, then rapid increase over starting growth, and then fluctuation around a high growth level that accompanies the inventory pattern just described. The reason for these patterns is that relatively slow growing wild stands are converted early in the planning horizon to rapidly growing managed plantations. The inventory is reduced initially but recovers fairly quickly. Intensive intermediate cutting and stand replacement keeps the inventory steady. Growth is reduced for a short period, but recovers rapidly to a much higher level.

In contrast, a steadily increasing inventory and growth that remains steady or slightly decreases indicates conservative use of the timber resource. The inventory of wild stands is held longer, wild stands are not converted to a more productive condition very quickly and, consequently, growth is sluggish over time. These patterns suggest underutilization of the potential timber resource.

Figure 4.19: Long-term Timber Harvest by Alternative

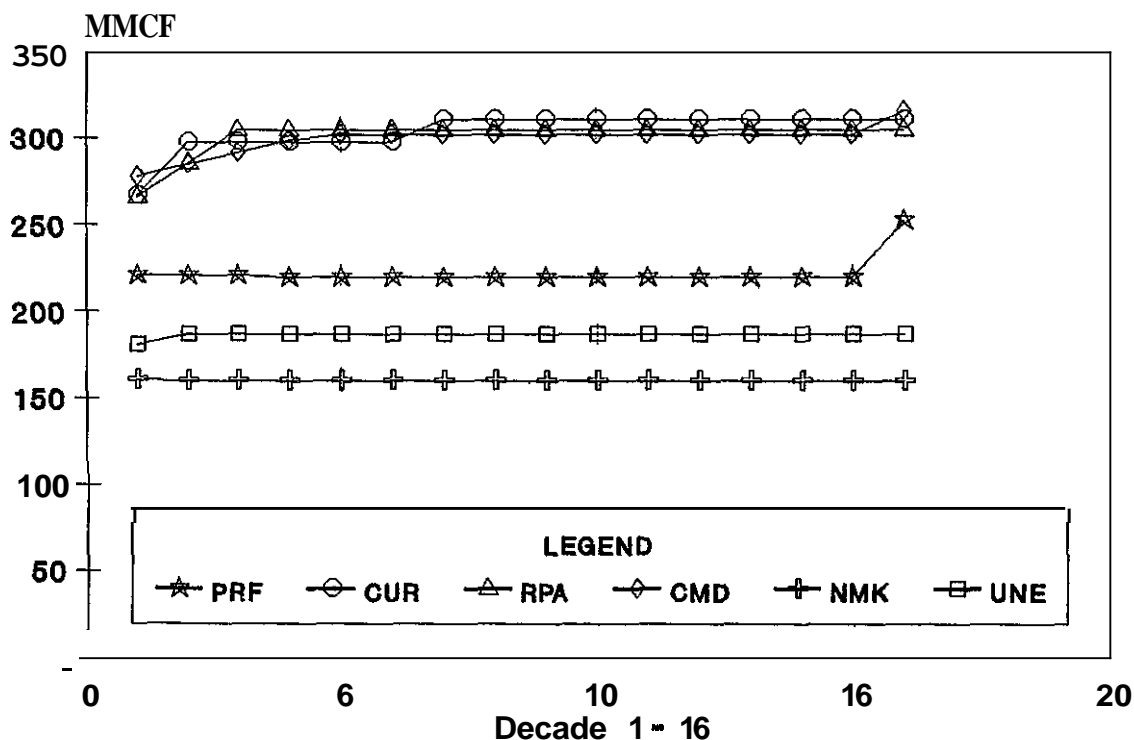


Figure 4.20: Long-term Timber Growth by Alternative

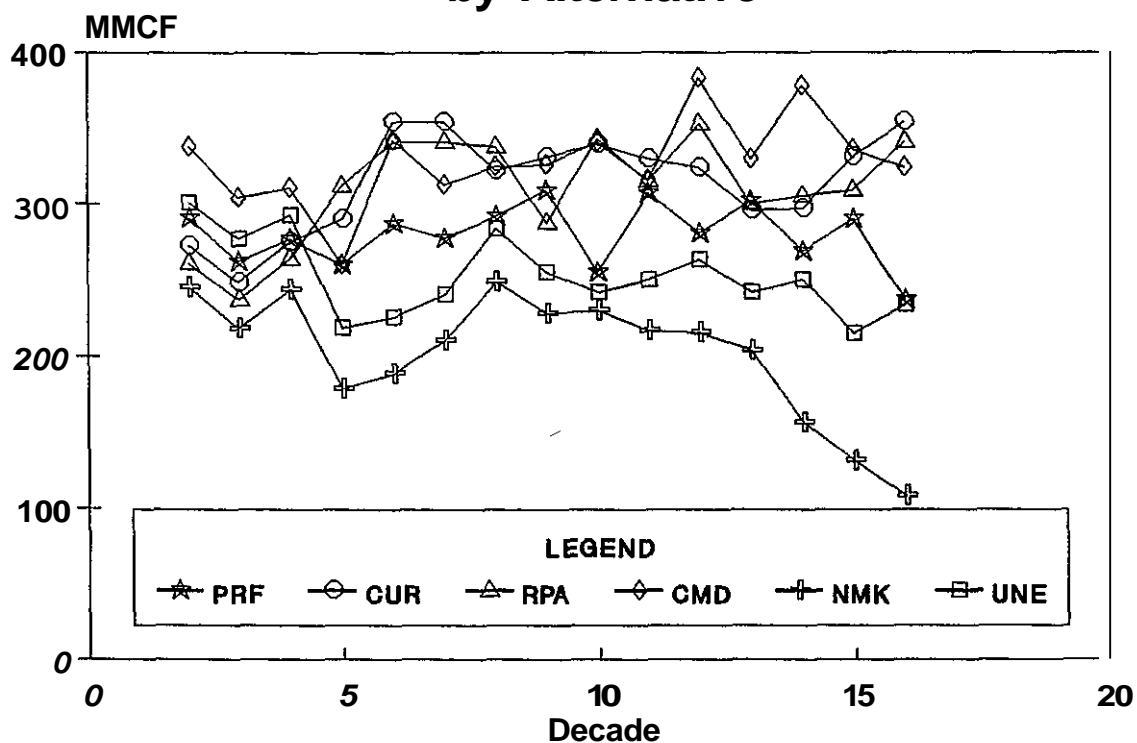
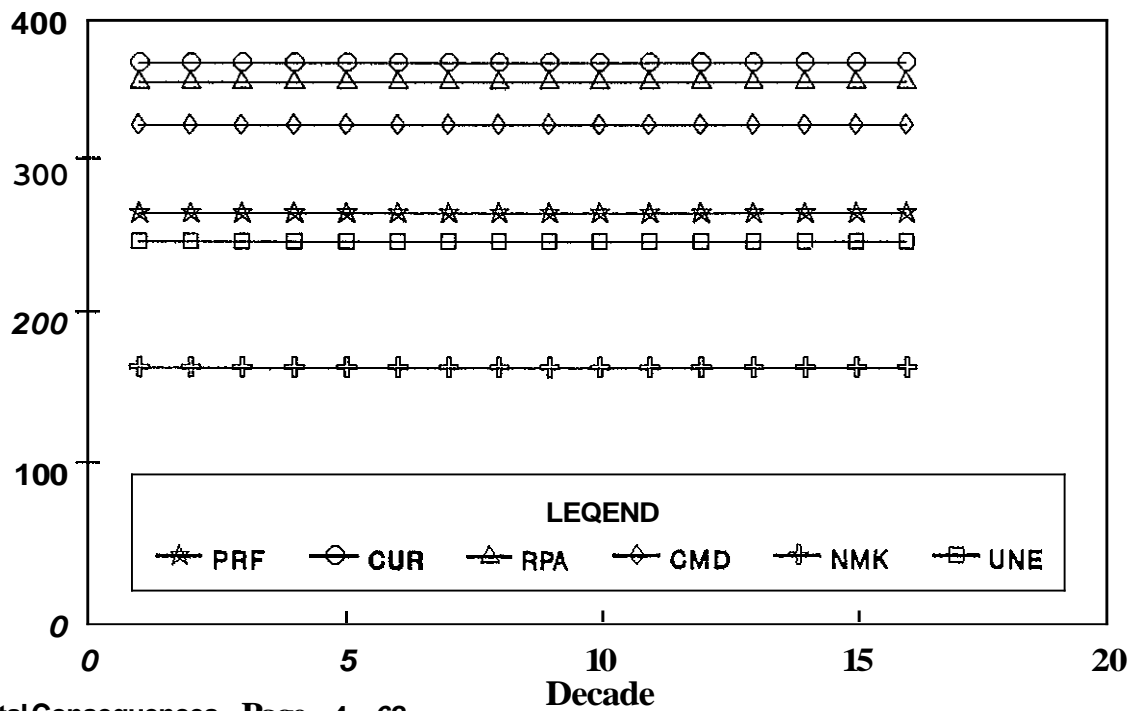
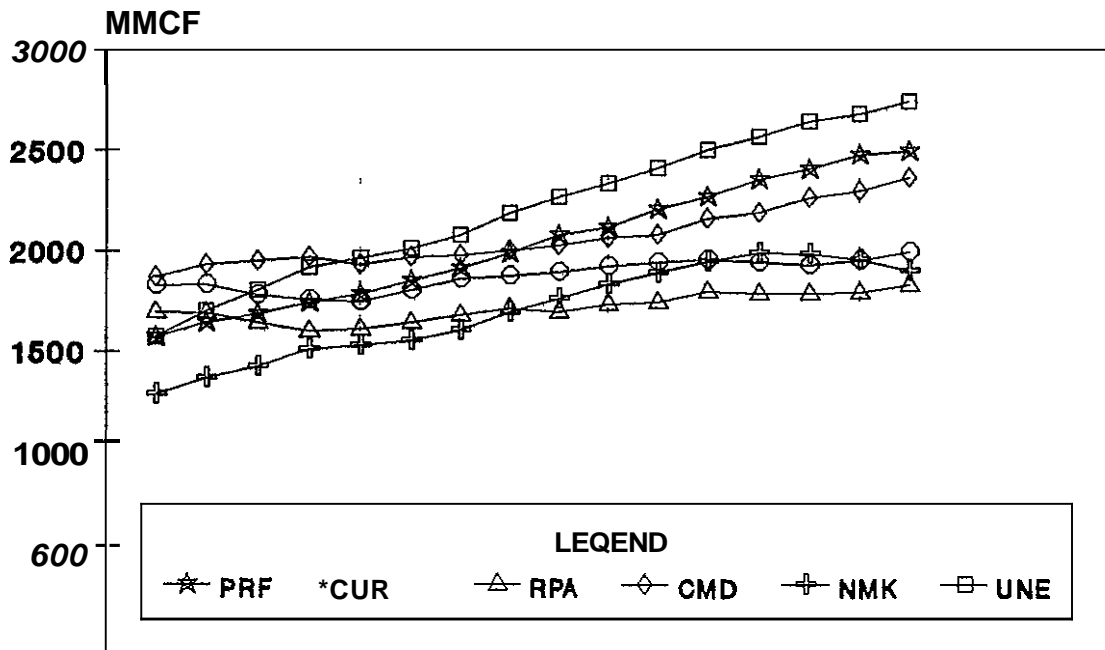


Figure 4.21: Long-term Timber Inventory by Alternative



Discussion

Alternative PRF would maintain a harvest (ASQ) of 220 MMCF (1,423 MMBF) per decade until the 15th decade, when it would increase to 249 MMCF. Growth would be about 300 MMCF in the first decade and then fluctuate between 200 and 300 MMCF for the rest of the planning horizon. Growth at the fifth decade would be 287 MMCF (106 percent of the LTSYC of 272 MMCF). At the 16th decade growth would be 237 MMCF or 87 percent of LTSYC. Inventory would start at a low of about 1,570 MMCF then steadily climb to 2,490 MMCF. These patterns suggest considerable restraint in use of the inventory and underutilization of the growth potential of the forest. It is a pattern typical of a largely young growth forest composed of wild stands with slow conversion to managed plantations.

Alternative CUR would start with a harvest of 267 MMCF (1,734 MMBF) in the first decade, climb to 298 MMCF in the second decade, and then increase to 311 MMCF for the rest of the planning horizon. Growth would start at 273 MMCF in the first decade, increase to 354 MMCF by the fifth period (95 percent of the LTSYC of 372 MMCF), and then fluctuate between 300 MMCF and 350 MMCF for the rest of the planning horizon. At the last decade growth would again be at 354 MMCF or 95 percent of the LTSYC. Inventory under Alternative CUR would begin at 1,827 MMCF, decrease to a low of 1,751 MMCF in the fifth period, then steadily rise to 1,994 MMCF at the 16th period. These patterns are indicative of relatively efficient use of the inventory and rapid conversion of wild stands to more productive managed plantations.

Alternative RPA would have a first-decade harvest of 266 MMCF (1,729 MMBF), increase to 286 MMCF in the second decade, and then increase again and level off at 305 MMCF in the third period. Growth would be at 261 MMCF initially, dip to 237 MMCF, then rise to 341 MMCF by the 5th decade. For the rest of the planning horizon growth would fluctuate between 300 and 350 MMCF. At the 16th period growth would be 341 MMCF or 95 percent of LTSYC. Inventory would begin at 1,700 MMCF, drop to almost 1,600 in the fourth period, then rise steadily to over 1,800 MMCF near the end of the planning horizon. Similar to Alternative CUR, the patterns show efficient use of the timber resource and resultant high yields.

Alternative CMD would start with a first-decade harvest of 278 MMCF (1,801 MMBF), increase over the next four decades to 303 MMCF, then level off. Growth would initially be 338 MMCF, dip to 260 MMCF in the fourth decade, then recover to 342 MMCF in the fifth period (103 percent of the LTSYC of 331 MMCF). For the rest of the planning horizon growth would be between about 310 MMCF and 380 MMCF per decade. At the end of the planning horizon, growth would be 324 MMCF or 98 percent of LTSYC. Inventory under Alternative CMD would begin at 1,873 MMCF and then steadily rise to over 2,300 MMCF by the end of the 160-year planning horizon. Harvest, growth, and inventory patterns show a combination of efficient and inefficient patterns. A large inventory is held and growth would not decrease rapidly until about the fourth period, but LTSYC and harvest would be relatively high later in the planning horizon. The reliance on uneven-age management and shelterwood cutting for a large portion of the harvest is the probable reason for the combination of patterns.

Alternative NMK would have a constant harvest of about 160 MMCF (1,040 MMBF). Growth would start at 245 MMCF in the first period, rapidly drop in decades 4 through 5, recover to about 230 MMCF in decades 7 through 12, and then steadily drop to 108 MMCF by the end of the planning horizon (68 percent of LTSYC). Growth during the fifth decade would be 189 MMCF or 111 percent of the LTSYC of 170 MMCF. Inventory would be at 1,292 MMCF in the first period, increase to 1,988 MMCF in the 13th decade, then decrease to 1,901 MMCF by the 16th period. These patterns suggest severe underutilization of the timber resource potential. The dropping off of the inventory and growth in the last decades indicates significant mortality.

Alternative UNE would have a first-decade harvest of 172 MMCF (1,108 MMBF), increase to 177 MMCF in the second decade, then remain at that level. Growth would start at 301 MMCF, drop to a low of 219 MMCF in the fourth period, then fluctuate between about 280 MMCF and 230 MMCF for the rest of the planning horizon. During the fifth period growth would be 226 MMCF or 89 percent of the LTSYC of 253 MMCF. At the end of the 160-year planning horizon, growth would be 234 MMCF (93 percent of LTSYC). Inventory would initially be at 1,574 MMCF and would rise to 2,734 MMCF after 150 years. A very large inventory would be carried through the planning horizon, indicating inefficient inventory use. The growth drop and recovery during periods 4 through 6 result from large amounts of shelterwood cutting in the second and third decades.

Eastside Pine Harvest

The market for small Jeffrey and ponderosa pine on the eastside of the Forest has not been strong. Timber sales have been offered recently with no buyers. About 3 MMBF per year has been sold in the past several years but with little or no bid premium on those sales. Until small log processing or cogeneration facilities are available, the market for eastside pine is likely to remain uncertain. Listed in Table 4.36 are the scheduled outputs in million board feet per year for eastside pine by alternative.

TABLE 4.36 - SCHEDULED OUTPUTS PER YEAR FOR EASTSIDE PINE BY ALTERNATIVE (MMBF)

ALTERNATIVE	DECADE1	DECADE2	DECADE3	DECADE4	DECADE5
PRF	6	6	14	14	14
CUR	5	17	8	37	26
RPA	16	23	22	22	20
CMD	11	12	15	22	20
NMK	18	18	18	10	14
UNE	6	6	11	11	11

Discussion

Alternatives PRF, CUR, and UNE would schedule about double the recently sold volume level in the first decade. There would be some risk that a portion of the volume would not be sold. The volume above 3 MMBF per year represents 2.1 percent of the ASQ for Alternative PRF, 1.2 percent for Alternative CUR, and 2.7 percent for Alternative UNE. The volume could likely be substituted from other forest types without major disruptions in the program.

Alternatives RPA, CMD, and NMK would schedule about four to six times the recently sold volume in the first decade. There would be a major risk that this volume could not be sold. The volume above 3 MMBF per year represents 7.5 percent of the ASQ for the RPA alternative, 4.4 percent of the ASQ for the CMD alternative, and 14 percent of the ASQ for the NMK alternative. It is unlikely that in the NMK and RPA alternatives this volume could be completely substituted from other forest types.

In the second decade, Alternatives PRF and UNE would continue to schedule eastside pine volume at relatively low levels. The other alternatives schedule volume at levels well above the present sell level. The percent of the ASQ that is eastside pine volume in the second decade is shown in Table 4.37.

TABLE 4.37 - PERCENT OF ASQ THAT IS EASTSIDE PINE VOLUME (SECOND DECADE)

PRF	CUR	RPA	CMD	NMK	UNE
4%	9%	12%	6%	17%	5%

Furbearer (Pine Marten, Fisher, and Sierra Nevada Red Fox) Habitat

TABLE 4.38 - POTENTIAL ASQ REDUCTION (MMBF/YR) FOR FURBEARERS BY ALTERNATIVE

	PRF	CUR	RPA	CMD	NMK	UNE
Projected ASQ	142.3	173.4	173.0	180.1	104.9	110.8
Potential Reduction *						
A (12%)	13-14	22-23	19-20	18-19	8-9	10-11
B (5%)	25-26	40-41	36-37	33-34	17-18	19-20
C (0%)	33-34	53-54	48-49	43-44	23-24	25-26

* Assumes all needed furbearer acres are used

A -- Represents 10% yields for denning/nesting habitat and 14% yields for travel corridors: average yield is 12%

B -- Represents 5% yields for denning/nesting habitat and for travel corridors.

C -- Represents no scheduled harvest (0% yields) in either denning/nesting habitat and travel corridors.

The potential effect on timber supply, or allowable sale quantity (ASQ), of providing for furbearers is shown in Table 4.38. This potential reduction would result from the implementation of Forestwide Standard and Guideline 23 (Endangered, Threatened, and Sensitive Species Management). In order to provide for furbearer needs, it is estimated that S&G #23 would be implemented on about 19 percent of the acreage of strata M3G, 45 percent of M4G, 9 percent of M4P, 45 percent of M6G, 39 percent of R3G, 36 percent of R4G and 10 percent of R4P (See Forest Plan Appendix H for strata descriptions.) Actual timber yield projections that can be obtained from areas managed for furbearers are under development. This table represents three possible yield scenarios: 12 percent average yields, 5 percent average yields, and total dedication (no yields). The actual yield effect, which will be dependent upon the actual prescription that is developed, will be determined during project-level environmental analysis using site-specific information. The effects of the furbearer prescription on ASQ will be monitored.

VEGETATIVE TYPES (CHAPARRAL)

Because of the small and scattered acreage of manageable chaparral, only moderate opportunities for a chaparral management program exist on the TNF, and no wide range of options were analyzed by alternative theme. Therefore, chaparral acreage and make-up would not differ significantly by alternative.

VISUAL RESOURCES

To display the effects of the alternatives on the landscape, or visual resources, the following indicators are used

- 1 Initial and Recommended Visual Quality Objectives (Table 4.39)
- 2 Existing and Future Visual Condition (Table 4.40)
- 3 Visual Condition (VC) - Visual Quality Objective (VQO) (Figure 4.23)
- 4 Visual Quality Index (Figure 4.24)
- 5 Change in Visual Condition (Appendix F)
6. Visual Rehabilitation Needs (Figure 4.25)
- 7 Visual Condition Decline Index (Figure 4.26)

These indicators compare the alternatives to two baselines the initial visual quality objectives (VQO's) and the existing visual condition. The initial VQOs evolved from an inventory of the Forest's physical and social environment. They set preliminary goals on predicted acceptable amounts of landscape alteration prior to consideration of other resource values. The other baseline, the existing visual condition (EVC), measures and describes how the landscape presently looks. While the initial VQO's and the EVC of any given area are not necessarily the same (since the former sets a preliminary goal for the future and the latter displays a current condition), the six VQO levels do equate to the six visual conditions displayed in Figure 4.23. Visual quality objectives set targets on how the landscape should **look** by a particular time in the future.

- 1 Initial and Recommended Visual Quality Objectives Table 4.39 displays the number of acres that would be placed under each VQO, subdivided by variety classes and distance zones, for each alternative. The table includes initial VQO acreages for purposes of comparison. Thus, the table displays the composition of lands assigned to each VQO with respect to their visual significance (foreground lands being more significant than middleground and background, and variety class A lands being more important than variety class C lands).
2. **Existing** and Future Visual Condition (**FVC**). Table 4.40 displays the FVC, how natural or altered the land would **look**, by the fifth decade for each alternative. The table shows how altered the land would look under each alternative compared to the areas present condition, and on a relative basis, whether the areas altered or left natural would tend to **be** scenic or common.

Predictions of FVC are largely based on the acreage harvested each decade because timber harvests alter the landscape more than other management activities. The Forest landscape architect estimates that by the fifth decade the overall visual condition would have reached a steady state in all alternatives because the regrowth of old harvest units balances the effects of new harvesting.

3. Visual Quality Index (**VQI**) Figure 4.24 illustrates the VQI of each alternative for the fifth decade. The VQI is a composite rating of the visual quality of the entire Forest. Figure 4.24 compares the overall VQI of each alternative to: (1) the other alternatives, (2) the maximum visual quality possible if the entire Forest were left totally natural, (3) the minimum visual quality possible if the Forest landscape were dominated by very obvious alterations, (4) the existing visual quality, and (5) the visual quality that would result if the initial VQO's were implemented. Thus, each alternative's increase or decrease in visual quality can be determined by comparing the alternative's VQI to the existing VQI and to the maximum possible increase or decrease.
- 4 Change in Visual Condition Appendix F illustrates the changes from the existing visual condition (EVC) to the future visual condition (FVC) by alternative. The figures trace the future change in the amount of human alterations for the lands in each EVC level. Starting with the number of acres of a given visual condition, one can see how many acres would be improved to show **less** evidence of management activities, how many acres would not be changed, and how many acres would decline in visual condition. The degree of change can also be determined by comparing the EVC level that designates the current condition of a given block of acreage to the FVC to which those acres would evolve. The information from these figures is the source for the amount of area needing rehabilitation (Figure 4.25) and the visual condition decline index (Figure 4.26).

- 5 **Visual Rehabilitation Needs** Graph Figure 4.25 shows the acres of TNF land which currently would not meet each alternative's VQO. Alternatives that set higher VQOs tend to have higher rehabilitation needs.
- 6 **Visual Condition Decline** Index Figure 4.26 measures by alternative the total reduction in the scenic quality of the TNF from its current condition. This index is derived from three factors: (1) the number of acres that decline in visual condition, (2) the degree that those acres decline, and (3) the future visual condition of those acres. Thus, two acres that decline from EVC I to FVC II count twice as much in this index as does one acre that declines from EVC I to FVC II. Similarly, one acre that declines from EVC I to FVC III (two levels of decline) would count twice as much as one acre that declines only one level from EVC II to FVC III. However, one acre that declines from EVC I to FVC II counts twice as much as an acre that declines from EVC III to FVC IV because of the higher ending condition (FVC). Higher FVC's generally correlate to a greater emphasis on visual quality assigned by that alternative

All Alternatives. In many areas of the TNF, private land (primarily private timber land) is heavily interspersed with National Forest System lands. In these situations the possibility exists for cumulative visual impacts from logging and road building activities. When possible, these possible cumulative impacts are avoided by cooperation with private landowners or by using design techniques on National Forest System lands that soften, reduce, or avoid visual impacts that could be created in conjunction with private lands. Even with these efforts there are situations where management activities and timber cutting on National Forest System lands could add to the visual cumulative effect to the point that the overall visual quality of the area would be reduced. In regards to the alternatives, it is expected that in the alternatives where there would be more management activities there would be more potential for visual cumulative impacts.

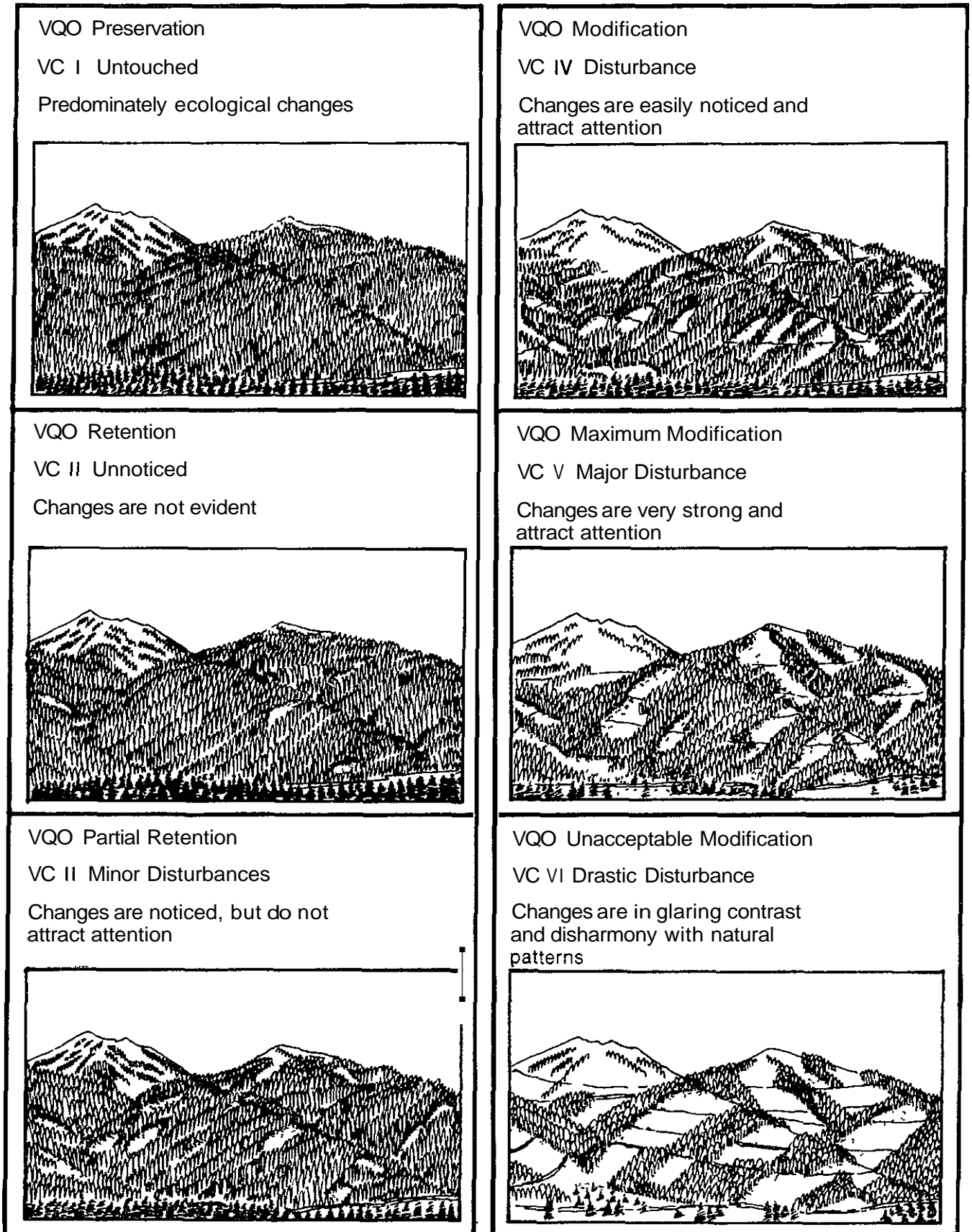
Alternative PRF. The PRF alternative would improve visual quality on 9.6 percent, maintain current visual quality levels on 25.5 percent, and reduce visual quality on 64.9 percent of the TNF. The overall visual quality of this alternative, measured by the VQI, is in the upper two thirds of all alternatives. The VQI would decrease by 5.4 from current conditions, a 10.4 percent decrease.

Five specially designated areas, the Granite Chief Wilderness, the North Fork American Wild River, and Sugar Pine Point, Lyon Peak/Needle Lake, and Babbm Peak Research Natural Areas, would be managed to appear pristine. Most foreground zones seen from major travel corridors, reservoirs, developed sites, and most major dispersed recreation areas would appear natural or almost natural with minor evidence of human changes. Most middleground views would be dominated by obvious landscape changes (chiefly, alterations in vegetative patterns caused by timber harvesting). About 5 times more acres would be in this condition than there are now. Some more visually important middleground areas, including the middlegrounds of State scenic highways, would remain largely natural in appearance with minor evidence of human activities. The major rivers crossing the Forest, the North Yuba, Middle Yuba, South Yuba, North Fork of the Middle Fork American River, and the Middle Fork American River would remain mostly natural appearing.

While most highly sensitive foreground zones would retain a natural appearance, many views that extend into the middleground and background would be dominated by the effects of timber harvests. Many moderately sensitive foreground zones would also have management activities that dominate the landscape. Timber management, however, would be generally less intensive on lands over 5,500 feet in elevation. These high country areas are the most scenic landscapes on the Forest. Consequently, while the effects of timber practices would be evident in middle and distant views in the uplands, those effects would generally be subordinate to the natural landscape.

Alternative CUR. This alternative would improve visual quality on 7.1 percent, maintain current visual quality levels on 19.0 percent, and reduce visual quality on 73.9 percent of the TNF. The overall visual quality that would result from this alternative is in the lowest quarter of all alternatives. The VQI would decrease from current conditions by 10.2, a 19.6 percent decrease.

Figure 4.23: Visual Condition (VC) - Visual Quality Objective (VQO)



NATURAL CHARACTER DOMINATES

ALTERED CHARACTER DOMINATES

TABLE 4.39 - ACRES OF INITIAL AND RECOMMENDED VISUAL QUALITY OBJECTIVES (VQO'S) BY VARIETY CLASS AND DISTANCE ZONES (ACRES) 1/

VQO	VARIETY CLASS 2/	DISTANCE ZONE 3/	INITIAL VQO 4/	PRF	CUR	RPA	CMD	NMK 5/	UNE 6/
Preservation (P) 3/	A	FG	---	13,415	13,214	13,224	13,214	13,415	13,415
		MBG	---	12,595	11,475	11,465	11,775	13,093	12,595
	B	FG	---	77	68	68	68	77	77
		MBG	---	825	797	797	1,122	825	825
	C	FG	---	---	---	---	---	---	---
		MBG	---	---	---	---	---	---	---
Retention (R)	A	FG	106,883	58,200	43,184	46,156		91,218	58,200
		MBG	145,974	48,486	30,351	25,640		85,518	48,486
	B	FG	94,055	32,632	25,181	33,148	2,680	111,349	40,632
		MGB	1,345	14,687	18,668	8,050	2,163	144,864	34,277
	C	FG	---	5,625	3,190	3,431		14,287	5,625
		MBG	---	3,470	1,896	3,690	235	19,862	6,880
Partial Retention (PR)	A	FG	16,930	44,326	6,671	5,559	20,156	17,976	44,692
		MBG	41,941	106,468	18,624	26,397	26,827	4,177	114,828
	B	FG	26,011	37,800	11,115	12,159	23,694	8,305	39,648
		MEG	202,018	104,448	26,437	62,316	57,822	65,005	138,888
	C	FG	14,514	2,506	1,240	2,026	2,340	---	3,147
		MBG	41,554	15,852	5,559	14,560	10,651	6,435	24,592
Modification (M)	A	FG	---	10,392	60,744	58,874	89,620	1,204	10,392
		MBG	---	17,846	127,465	124,413	148,784	85,127	9,120
	B	FG	---	51,852	83,702	74,691	93,624	336	43,852
		MBG	70,044	139,624	214,781	189,291	198,859	65,354	83,746
	C	FG	---	7,003	10,064	9,057	11,843	227	7,003
		MBG	19,212	40,429	51,922	42,683	48,210	39,366	27,638
Maximum Modification (MM)	A	FG	---	---	---	---	---	---	---
		MBG	---	---	---	---	---	---	---
	B	FG	---	---	---	---	---	---	---
		MBG	6,809	18,337	19,533	19,762	20,230	4,168	18,337
	C	FG	---	---	---	---	---	---	---
		MBG	7,084	7,479	8,473	6,917	8,754	2,167	7,479

1/ The VQO's are set for each alternative based on the management prescriptions for each area in order to be compatible with those prescriptions

2/ The three Variety Classes indicate the natural scenic quality of landscapes. Variety Class A refers to highly scenic distinctive areas, Variety Class B is associated with common or widespread landscapes, and Variety Class C corresponds to dull, monotonous landscapes

3/ Distance Zone FG - Foreground, MBG - Middle and Background.

4/ Initial VQO's are derived from an inventory system that does not generate any preservation VQO's unless the land has been, or is, awaiting classification as Wilderness, Research Natural Area, etc. The initial VQO is the result of an inventory process and sets preliminary goals on predicted acceptable amounts of landscape alteration (prior to the consideration of other resource values)

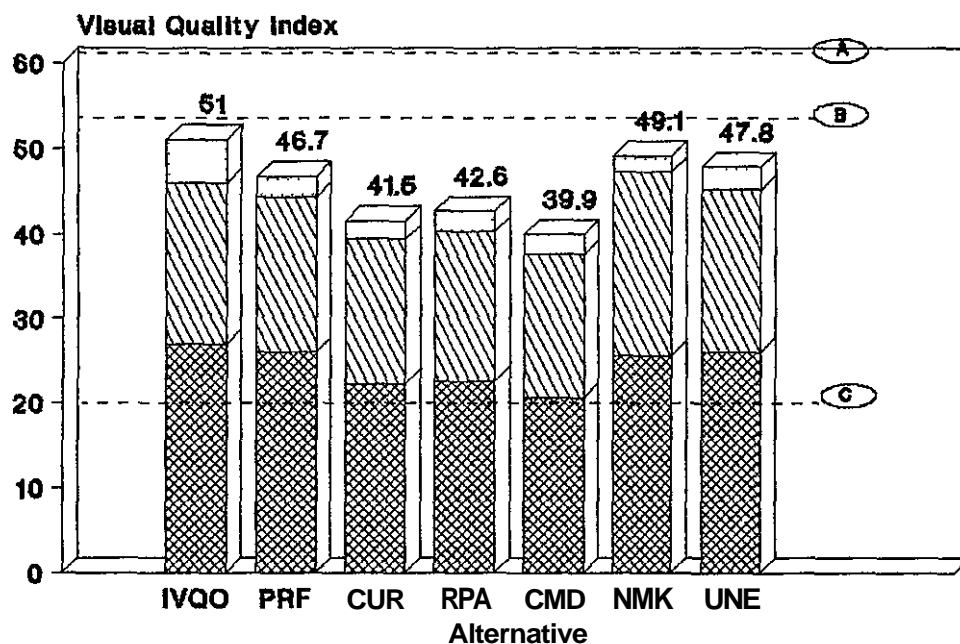
5/ NMK alternative. Initially, no VQOs were set for managed timber acres in this alternative because of the three-acre limit in opening size for timber harvest. The final VQO's set in this table are based on estimates of how many managed timber acres could meet each VQO along with the normal allocation of VQO's for other acres such as SPNM, recreation sites, etc.

6/ UNE alternative. The VQO's set for this alternative are based on the PRF alternative plus several areas with improved VQO's, and VQO's adjusted higher based on the estimated number of acres of uneven-age management that would meet partial retention and retention VQO's

TABLE 4.40 - ACRES OF EXISTING AND FUTURE VISUAL CONDITIONS BY VARIETY CLASS BY ALTERNATIVE IN FIFTH DECADE

Visual Condition 1/	Variety Class 2/	Existing Visual Condition 3/	PRF	CUR	RPA	CMD	NMK	UNE
I	A	26,167	26,010	24,689	24,689	24,989	26,508	26,010
	B	4,323	902	865	865	1,190	902	902
	C	184	---	---	---	---	---	---
II	A	234,326	106,686	73,535	71,796	1,352	176,736	106,686
	B	280,378	47,319	43,849	41,198	4,863	256,213	74,909
	C	43,126	9,095	5,086	7,121	566	34,149	12,505
III	A	35,799	150,794	25,295	31,956	46,983	22,153	159,520
	B	81,826	142,248	37,552	74,475	81,516	73,309	178,536
	C	24,898	18,358	6,799	16,586	12,991	6,435	27,739
IV	A	14,576	28,238	188,209	183,287	238,404	86,331	19,512
	B	28,885	191,476	298,483	263,982	292,483	65,690	127,598
	C	11,691	47,432	62,006	51,740	60,053	39,593	34,641
V	A	860	---	---	---	---	---	---
	B	4,348	18,337	19,533	19,762	20,230	4,168	18,337
	C	2,205	7,479	8,473	6,917	8,754	2,167	7,479
VI	A	---	---	---	---	---	---	---
	B	522	---	---	---	---	---	---
	C	260	---	---	---	---	---	---

**Figure 4.24: Visual Quality Index,
Fifth Decade**



LEGEND

Variety Class A
 Variety Class B
 Variety Class C

NOTES

- (A)** Max. level poss. if all lands met preservation = 60
- (B)** Existing Level = 52
- (C)** Max. level poss. if all met Max. Modification = 20

Figure 4.25: Visual Rehabilitation Acres, Fifth Decade

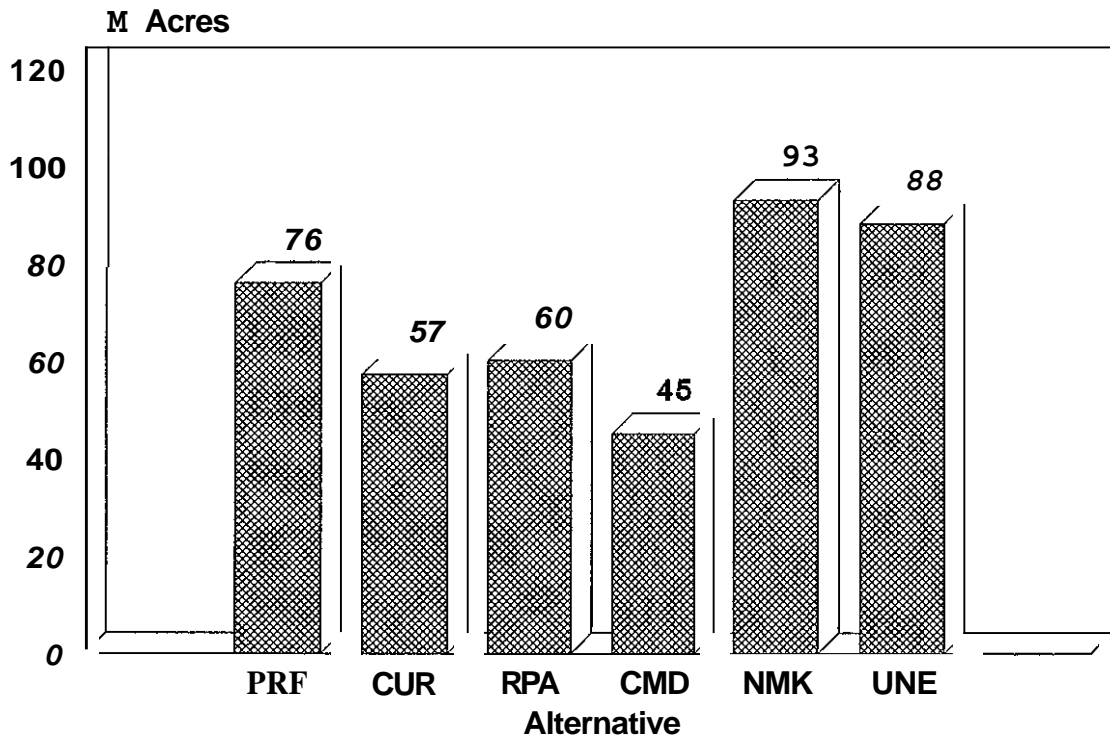
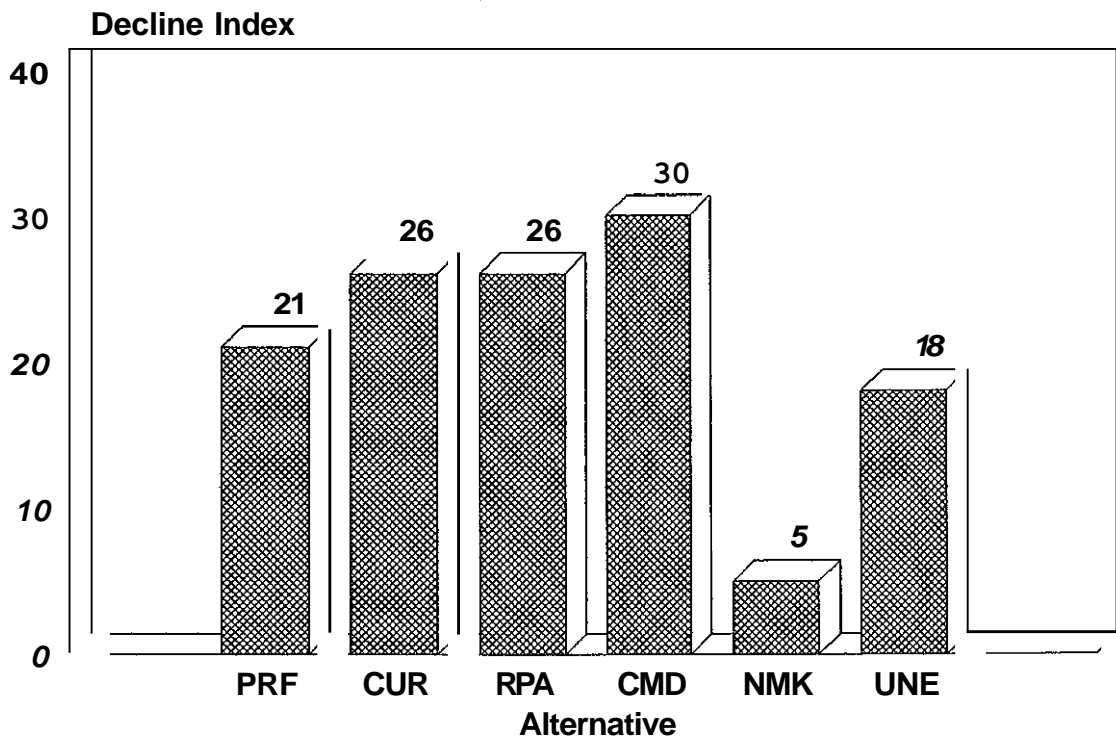


Figure 4.26: Visual Condition Decline Index, Fifth Decade



In the CUR alternative, as in all of the alternatives, the Granite Chief Wilderness, the North Fork American Wild River, and the Babbitt Peak Research Natural Area would be managed to appear pristine. Most visually sensitive foregrounds seen from travel corridors, reservoirs, and developed sites would appear natural or almost natural with minor evidence of human changes. Relatively few acres would be managed to maintain their natural appearance for dispersed recreation. Most middleground and background views would be dominated by obvious landscape changes (chiefly alterations in vegetative patterns caused by timber harvesting). Areas dominated by human alterations would be 9 times greater than current conditions under this alternative. Thus, while most highly sensitive and some moderately sensitive foreground zones would retain a natural appearance, most middleground and background views throughout the Forest would be dominated by the effects of timber harvests.

Alternative RPA. This alternative would improve the visual quality on 7.6 percent, maintain current visual quality levels on 17.7 percent, and reduce visual quality on 74.7 percent of the TNF. The overall visual quality that would result from this alternative is in the lowest quarter of all alternatives. The VQI would decrease from current conditions by 9.6, an 18.5 percent decrease.

Three specially designated areas, the Granite Chief Wilderness, the North Fork American Wild River, and the Babbitt Peak Research Natural Area, would be managed to appear pristine. Most foreground zones seen from travel corridors, reservoirs, and developed sites would appear natural or nearly natural with minor evidence of human changes. In addition, those lands in the middleground views of State scenic highways would be managed to retain an almost natural appearance. Most other lands in background and middleground zones would be dominated by obvious landscape alterations (chiefly, alterations in vegetative patterns). Over 8 times more land would appear obviously altered by human activities than currently exists. Most sensitive foreground zones of major roads, reservoirs, and recreational trails would be maintained with an essentially natural appearance. Except for the State scenic highway corridors, which would remain predominantly natural, management activities would dominate most middleground and background areas throughout the Forest.

Alternative CMD. The CMD alternative would improve the visual quality on 5.6 percent, maintain the current visual quality levels on 8.9 percent, and reduce the visual quality on 85.5 percent of the TNF. The overall visual quality that would result from this alternative is the lowest of all the alternatives analyzed. The VQI would decrease from current conditions by 12.1, a 23.3 percent decrease.

Of all alternatives, the CMD alternative would show the most evidence of management activities. The North Fork American Wild River, Granite Chief Wilderness, and the Sugar Pine Point and the Babbitt Peak Research Natural Areas would be managed to appear untouched. Most of the rest of the Forest would appear predominantly altered. The foregrounds and middlegrounds of the State scenic highways would be managed to maintain a mostly natural appearance. Also the foregrounds of the major reservoirs on the forest would be managed to maintain a natural appearance.

Management activities would obviously alter about 10 times as much area as is presently affected. The foreground, middleground, and background of virtually all views of the TNF outside of the State scenic highway corridors and reservoir foregrounds would be dominated by human-caused changes of the landscape.

Alternative NMK. This alternative would improve the visual quality on 12 percent, maintain the current visual quality levels on 60 percent, and reduce visual quality on 28 percent of the TNF. This alternative has the highest overall visual quality of all the alternatives analyzed. The VQI would decrease from current conditions by 2.7, a 5.1 percent decrease.

The NMK alternative would manage the most areas of any alternative for natural appearance. The Babbitt Peak, Basin Peak, Mt. Lola, Lyon Peak/Needle Lake, and Sugar Pine Point Research Natural Areas, the Granite Chief Wilderness, and the North Fork American Wild River would be managed to retain a pristine appearance. The West Yuba, East Yuba, North Fork of the American River, Duncan Canyon, Castle Peak, Grouse Lakes, North Fork of the Middle Fork of the American River, Bald Mountain, Middle Yuba, North Lafayette (a new proposal in this alternative), and Lakes (Basin) roadless areas would be managed to retain a natural appearance. In general, the level of landscape alterations on the remainder of the TNF would appear mostly natural for approximately three quarters of the Forest. In this alternative there would be no effort at

setting visual priorities on timbered lands for specific roads or use areas of high public sensitivity other than the State Scenic highways. However, because of the limited size of timber harvest openings, in most cases the landscape would look natural or mostly natural. Around one quarter of the Forest acres would have some level of alterations from Forest road construction and harvest openings that would be visible and obvious to the Forest visitor. The obvious changes would tend to be seen on steeper slopes in middleground and foreground views or in immediate foreground on gentle slopes. The small size of openings would tend to moderate the visual impact of management activities so that this alternative has the least acres where there would be strong obvious alterations that would dominate the landscape. The foreground and middleground views of State scenic highways would be managed to maintain a mostly natural appearance.

Thus, the TNF landscape would have a natural or mostly natural appearance on a majority of Forest lands. Management activities would occasionally dominate the landscape to a moderate degree in areas with steeper slopes in foreground and middleground. Overall this alternative provides the most areas where the natural landscape character would dominate.

Alternative UNE. The UNE alternative would improve visual quality on 11.1 percent, maintain current visual quality levels on 29.4 percent, and reduce visual quality on 59.5 percent of the TNF. The overall visual quality of this alternative, measured by the VQI, is in the highest quarter of all alternatives. The VQI would decrease by 4.2 from current conditions, an 8 percent decrease.

Five specially designated areas, the Granite Chief Wilderness, The North Fork American Wild River, Sugar Pine Point, Lyon Peak/Needle Lake, and Babbitt Peak Research Natural Areas, would be managed to appear pristine. Most foreground zones seen from major travel corridors, reservoirs, developed sites, and most major dispersed recreation areas would appear natural or almost natural with minor evidence of human changes. Many middleground views would be dominated by obvious landscape changes (chiefly, alterations in vegetative patterns caused by timber harvesting). With uneven-aged management, fewer middleground views would look altered than in the PRF alternative because of small openings (less than two acres) and Selective logging. In the background views uneven-aged harvest activities generally would not be visible. In the foreground uneven-aged management would reduce the visual impact along secondary roads that otherwise would look substantially altered. Less than 4 times more acres would be in this condition than there are now. Some more visually important middleground areas, including the middlegrounds of State scenic highways, would remain largely natural in appearance with minor evidence of human activities. The North Yuba, Middle Yuba, South Yuba, North Fork of the Middle Fork American River, and the Middle Fork American River would appear mostly natural.

While most highly sensitive foreground zones would retain a natural appearance, many views that extend into the middleground and background would be moderately dominated by the effects of timber harvests. Some moderately sensitive foreground zones would also have management activities that dominate the landscape. Uneven-aged timber harvesting activities would reduce the overall visual impact in many of the above areas. Also, timber management would be generally less intensive on lands over 5,500 feet in elevation. These high country areas are the most scenic landscapes on the Forest. Consequently, while the effects of timber practices would be evident in middle and distant views in the uplands, those effects would be generally subordinate to the natural landscape.

WATER

Indicators used to display effects of each alternative are (1) cumulative watershed effects (CWE's), and (2) improved watershed conditions (i.e., soil and water resource improvement).

The primary management activity influencing CWEs is timber management, which includes timber harvesting, associated road construction, fuels treatment, and reforestation. Other resource management practices, such as range management, recreation development, and current mining operations, have a lesser overall influence although they are included for analysis at the project level. The soil and water resource improvement practices have a beneficial influence on water yield, water quality, and CWEs

Water developments, groundwater, water yield, and water uses and needs were not analyzed as indicators because they are not predictable or their consequences would not vary significantly by alternative.

Cumulative Watershed Effects

Table 4.41 summarizes Forestwide equivalent road acres (ERA's) and Forestwide percent changes compared to the 1977-1987 period. These values are indicative of the future potential to incur CWEs. In essence, the larger the ERA, the greater the risk that a recurrent storm event would result in unacceptable channel impacts, this is true even if individual small watersheds are within acceptable thresholds, which should lessen those impacts. The values are averages for the first five decades.

TABLE 4.41 - CUMULATIVE WATERSHED EFFECTS BY ALTERNATIVE 1/

ALTERNATIVE	EQUIVALENT ROAD ACRES 2/	PERCENT ERA CHANGE COMPARED TO 1977-1987 PERIOD
PRF	22,700	+32
CUR	24,200	+41
RPA	27,500	+60
CMD	25,800	+50
NMK	19,500	+14
UNE	21,500	+25

result in low potential for CWEs in small watersheds. None of the alternatives is expected to result in high potential for CWEs in small watersheds because the Forest would attempt to stay within thresholds in these watersheds. The difference between those alternatives rated moderate and those rated low lies in the relative differences in EPA's (and number of watersheds near threshold) relative to current levels and to each other, and the chance that a recurrent storm event would cause channel impacts even though estimated thresholds are being met

The greater the proportion of private land within a watershed, the greater the potential to limit TNF activities, primarily timber harvesting. Major watersheds where predicted outputs and planned activities might be limited by mixed ownerships because of the potential to incur cumulative watershed effects are the Middle Yuba (44 percent private), South Yuba (51 percent private), North Fork American (35 percent private), Rubicon (37 percent private), Truckee (61 percent private). Smaller portions of all other National Forest System watersheds are similarly affected.

Improved Watershed Condition (Soil and Water Resource Improvement)

The benefits of treated watershed acres have not been quantified in terms of dollars or other physical outputs. Benefits include reduced erosion and sedimentation, improved stream flows, restoration of land to timber and forage production, improved wildlife habitat, and improved visual quality.

The acres proposed for soil and water resource improvement per decade are displayed in Table 4.42 for each alternative.

TABLE 4.42 • TOTAL ACRES OF PLANNED SOIL AND WATER RESOURCE IMPROVEMENT

DECADE	PRF	CUR	RPA	CMD	NMK	UNE
1	1,000	250	1,000	250	1,000	1,000
2	900	250	900	250	900	900
3	0	0	600	0	600	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
TOTAL	1,900	500	2,500	500	2,500	1,900

There are about 2,500 acres that could be improved by vegetative and mechanical treatment. An additional estimated 11,000 to 12,000 acres of declining watershed would recover best by limiting management activities; these declining areas are treated similarly in all alternatives and thus are not analyzed here

Alternatives were assigned acreage targets for treatment based on the overall theme of each alternative. The RPA and NMK alternatives would result in the greatest acreages of planned soil and water resource improvement and treat the maximum treatable acres; water quality improvement and restoration of degraded riparian areas would be maximized. The CUR and CMD alternatives would result in the fewest acres of planned treatment due to historic management emphasis on other resources, such as timber and grazing; this would result in the lowest improvement in water quality and riparian areas in currently degraded areas. The PRF and UNE alternatives would treat the highest priority areas which are contributing to degradation of riparian areas and water quality: there would be an improvement in water quality and restoration of riparian areas in currently degraded areas, although not the maximum potential.

Investment in soil and water resource improvement on high priority abandoned hydraulic diggings may cause problems as these areas are still available for placer mining; however, soil and water resource protection measures would be incorporated into any placer mining plan of operation after preparation of a Site-Specific environmental analysis.

WILD AND SCENIC RIVERS

The North Fork American River, as designated by Congress, will be managed as a wild river. There are 5,788 acres that have been withdrawn from timber production and mineral entry.

The Heritage Conservation and Recreation Service (now a part of the National Park Service) included parts of the Middle Yuba River and South Yuba River in its Nationwide Rivers Inventory, completed in 1981. Later, an eligibility assessment by the Tahoe National Forest concluded that scenic and recreation values in the inventoried portions of the Middle Yuba River and South Yuba River are 'outstandingly remarkable;' therefore, they are eligible for inclusion in the Wild and Scenic River System (refer to Appendix E). These rivers were not included in any of the alternatives considered in detail because suitability was not analyzed.

Based on public comment on the Draft EIS and Forest staff review, Canyon Creek (along the Tahoe and Plumas National Forest boundary), the North Fork of the Middle Fork American River, Lavezzola Creek, and the Middle Fork American River were reviewed for 'outstandingly remarkable' features. No 'outstandingly remarkable' features were identified during the review process on these four rivers and therefore they are not eligible for inclusion in the Wild and Scenic River System (refer to Appendix E). These rivers were not included in any of the alternatives considered in detail.

The effects of each alternative on the North Fork American Wild River will vary according to the management emphases of the alternatives. Under all alternatives no activities would occur within the wild river corridor unless the activities are consistent with the wild river management plan. Activities undertaken outside of the wild river boundary can, however, affect the wild river. The effects of implementing each alternative are discussed below. Only those resources that may be affected by activities outside the wild river are discussed. For example, water quantity and quality would be little affected under any of the alternatives because of the small area within the watershed that would be bared because of regeneration harvests at any one time. Timber, game, and wildlife in the wild river would not be affected by activities proposed for adjacent lands.

Alternatives PRF and UNE. Activities associated with these alternatives could slightly affect the recreation experience of wild river visitors. Timber harvesting would cause some possible disturbance from noise and dust that would be more than currently produced. Visual quality would, however, remain high along trails which access the wild river and views from the wild river.

Alternative CUR. This alternative continues current management and would produce few effects on the wild river. Some timber harvest areas may be visible from within the wild river. Recreation experience levels would be reduced moderately from existing levels.

Alternative RPA. Higher timber harvest levels in this alternative would create more visual modifications than currently exist and would increase the likelihood of human activities being seen or heard from the wild river. Depending on the location and magnitude of these changes, recreational experience levels may be reduced. Visual quality along trails that access the wild river would remain high.

Alternative CMD. In this alternative the forest landscape would appear much more altered than currently. The likelihood of these alterations being visible from the wild river would be high and recreation experience levels would be reduced. The CMD alternative has the highest timber harvest levels and would have the greatest likelihood of creating vegetation changes that are visible from the wild river.

Alternative NMK. This alternative would provide the greatest emphasis on dispersed recreation and maintenance of a near-natural forest environment. Trail system improvements in the wild river and the designation of the entire North Fork American River unroaded area to semi-primitive nonmotorized would provide the highest quality recreation experience levels for the wild river.

WILDERNESS AND ROADLESS AREAS

The California Wilderness Act of 1984 designated 18,705 acres of the Granite Chief Rare II area to wilderness. Eleven areas were originally considered for wilderness evaluation.

The effects of implementing the various alternatives upon the roadless areas released for other multiple uses by the California Wilderness Act of 1984 would be of two types: These areas would either (1) be designated as semi-primitive nonmotorized (SPNM) recreation areas or would (2) be opened to varying mixes of multiple-resource management. In the former case, prevalent in the NMK alternative, the unroaded character of these areas would essentially be maintained. Consequently, the opportunity to reevaluate them as roadless areas in the future would remain. In the latter case, the areas would be roaded and modified at varying rates and to varying degrees, depending on the management themes and emphases of the alternatives. The alternatives with the greatest amounts of road construction and timber harvesting, the CMD, CUR, and RPA alternatives, would tend to reduce their SPNM character and to preclude future reevaluation. Appendix G describes each of the roadless areas, displays management prescription allocations by alternative, and describes the management prescription allocations for the preferred alternative.

The PRF, UNE, and RPA alternatives would assign some areas to SPNM recreation and most other areas to other resource management emphases, and would thereby preserve a moderate level of opportunity to reevaluate the roadless areas. The CUR and CMD alternatives would manage no former roadless areas for SPNM recreation, but the CUR alternative would tend to road them at slower rates than the CMD alternative.

The effects of implementing the various alternatives on the Granite Chief Wilderness would come from activities occurring outside of the area. Activities which produce noise, dust, or visual impacts as perceived from within the wilderness can reduce the quality of experience for wilderness users. Activities outside the wilderness that increase the risk of wildfire or insect and disease problems can cause environmental changes within the wilderness. No changes in water quality or quantity would occur due to activities outside the wilderness because the wilderness is located in the headwaters of several watersheds.

Alternatives PRF and UNE. In these alternatives vegetation modification and visual alterations would occur outside the wilderness. Noise and dust from logging and road use may be noticed by wilderness users. From the periphery of the wilderness, vegetative modification and human activities may be more evident than currently. New roads outside the wilderness may increase access and use within the wilderness. Roading and timber harvest would reduce the risk of fire and insect and disease problems spreading into the wilderness. Visual degradation could occur if ski areas expand with facilities placed on ridges in view of wilderness users.

Alternatives CUR, RPA, and CMD. These alternatives would have higher timber harvest levels that would increase the likelihood of noise and dust being noticed by wilderness users. Areas surrounding the wilderness would show greater evidence of human activities and would be visible from areas on the perimeter of Granite Chief. Roads built to facilitate timber harvests would provide greater access to Granite Chief and could increase use. New roads would also provide opportunities to build trailheads to more evenly distribute wilderness use. Vegetation management outside the wilderness would reduce the risk of insect and disease problems spreading into the wilderness. Timber harvest and fuels management in the surrounding area would reduce the risk of wildfire encroaching on the wilderness.

Alternative NMK. This alternative would preserve the area surrounding Granite Chief for dispersed nonmotorized recreation. Vegetation modification would be less evident than presently. Wilderness users would not notice outside area dust or noise except possibly from mining operations. The Granite Chief and surrounding area is not highly mineralized so few mining operations would be expected to affect the wilderness. Low levels of vegetation management and road construction would limit access to the area surrounding Granite Chief. This limited access would make treatment of insect and disease problems more difficult and could increase the risk of such problems spreading into the wilderness. Similarly, wildfire suppression would be more difficult and could increase the chance of wildfire entering the wilderness from adjacent areas.

In this alternative the Headwaters Basin of the North Fork of the American River would be designated as a Special Interest Area. This designation would further insulate wilderness users from outside influences. The emphasis on dispersed recreation in this alternative would also enhance visitor enjoyment of Granite Chief

WILDLIFE

introduction

Implementation of the management programs in any alternative would result in direct and indirect habitat changes for local wildlife species. Habitat changes would occur from direct habitat improvement projects, but would more often result from other resource management programs. On the TNF, resource management programs that could yield significant changes in wildlife habitats include timber, fire, range, hydroelectric, minerals, recreation, and engineering. These activities affect the quantity, quality, and distribution of important habitats. Collectively, they strongly influence the abundance and distribution of animals on the Forest.

Trends in selected management indicator species are displayed below to compare the relative effects of alternative Forest management strategies on wildlife. Because tools for accurately estimating changes in animal population trends are currently lacking, the evaluations are typically made by comparing trends in management programs that affect target species or their habitats.

Federal Threatened and Endangered Species

Peregrine falcons are wide-ranging and typically choose remote rock ledges for nest sites. Management activities are not expected to have serious adverse impacts on peregrine falcons in any alternative. All alternatives would comply with the recovery plan for peregrine falcons, which specifies a Forest target of three breeding pairs. Local interest in exceeding the target for three breeding pairs has not been observed.

Wintering and nesting bald eagles inhabit forested sites near reservoirs on the TNF. Recreation activities could negatively affect nest and roost sites in some locations. However, recreation use near nests and roosts has historically been regulated to protect bald eagles. Similar mitigations are assumed for all alternatives. Each alternative would comply with the recovery plan for bald eagles, which specifies a Forest target of five breeding pairs. The recovery plan target is believed to be near the maximum potential for the Forest.

Forest Service **Sensitive** Species

Spotted Owls. The current Forest population of spotted owls is believed to be about 110 pairs. Estimating the effects of management on spotted owl populations is difficult when tools for tracking the spatial arrangements of the habitat are lacking. However, the relative effects of each alternative can be evaluated by comparing management factors that could directly or indirectly affect the quantity or quality of spotted owl habitat. These factors are 1) the number of spotted owl habitat areas (SOHA's) in owl networks, 2) the strategies for their management, and 3) the number of suitable acres available on the Forest over time. Comparisons of the factors important for spotted owl habitat management are shown in Table 4.43.

Table 4.43 demonstrates that Alternatives PRF, CMD, and UNE would provide a Forest network of 33 SOHA's. The CUR and RPA alternatives would provide 34 SOHA's. The NMK alternative would provide at least seven additional SOHA's by preventing timber harvest in large tracts of mature forest that contain suitable sites for spotted owls.

Each alternative would have long-range management strategies for SOHA management (see Appendix P). Site-specific SOHA management plans would be developed by interdisciplinary teams and would be completed before any new ground-disturbing activities are planned. The RPA, CUR, and CMD alternatives would plan timber harvest in the core, nesting core, and foraging areas of each SOHA with replacement acres provided. The CMD alternative would allow this harvest in all SOHA's by the sixth decade. The PRF, NMK, and UNE alternatives use local resource information of each SOHA to determine that no scheduled harvest would occur in about 65 percent of the SOHA's.

TABLE 4.43 - EFFECTS OF THE ALTERNATIVES ON SPOTTED OWLS

	PRF	CUR	RPA	CMD	NMK	UNE
SOHA Number	33	33	34	33	40	33
SOHA Management						
No Scheduled Harvest	22	1	1	1	27	22
Harvests Planned	11	32	33	33	12	11
Suitable Acres in Decade 5 (1,000) (1988 = 176.3)	136.7	102.6	130.0	123.0	186.7	142.6

All alternatives would maintain 1,000 acres of suitable habitat in each SOHA where site conditions allow. However, the spatial arrangement of owl habitat that would result from long-term timber harvest has not been evaluated. Without an understanding of the spatial arrangement of the 1,000 acres, the PRF, NMK, and UNE alternatives offer greater assurances that prevailing direction for maintenance of several large (300-acre) tracts of spotted owl habitat would be accomplished in each SOHA over time.

The potential number of owls inhabiting areas outside network SOHA's cannot be accurately estimated from Table 4.43. However, alternatives that provide the largest number of suitable acres for spotted owls would likely yield the largest number of non-network owl pairs. Accordingly, the NMK alternative should have the largest number of non-network owls because it provides a 5 percent increase in suitable owl habitat by the fifth decade. Conversely, the CUR alternative could be expected to yield the fewest birds because it reduces suitable habitat by 30 percent over the same period. The remaining alternatives would yield conditions that are intermediate to the NMK and CUR.

Willow Flycatcher. Forestwide habitat inventories and estimates of willow flycatcher numbers are currently lacking. However, the effects of the alternatives on willow flycatchers can be evaluated by comparing management programs that could affect willow flycatcher habitat. On the TNF, those programs are 1) livestock grazing, 2) riparian area management, and 3) wildlife habitat management. Increased livestock grazing would raise the potential for adverse effects because significant cattle disturbance of nest sites and other important willow flycatcher habitat has been demonstrated in several areas in the Sierra Nevada (Serena 1982, Sanders and Flett 1988, and Valentine in prep). Conversely, extending the width of riparian protection zones and including the species in the Forest wildlife habitat management program would benefit willow flycatchers. The effects of the alternatives are compared in Table 4.44.

Table 4.44 suggests that the NMK alternative would yield the most beneficial conditions for willow flycatchers because it offers 1) the smallest potential for adverse effects from livestock grazing, 2) the widest riparian protection zones, and 3) wildlife program emphasis on willow flycatcher habitat. The RPA alternative would have the greatest potential for adverse effects because it increases livestock grazing over 60 percent in the first decade and does not emphasize protection of willow flycatcher habitat. The remaining alternatives would have an intermediate effect on willow flycatcher habitat.

TABLE 4.44. EFFECTS OF THE ALTERNATIVES ON WILLOW FLYCATCHERS

	PRF	CUR	RPA	CMD	NMK	UNE
AUM's (1,000/yr)						
Decade 1	20.8	22	34	21	9	20.8
Decade 5	23	20	30	27	1	23
Riparian Protection (Avg. Buffer Width, ft)	125	100	100	100	125	125
Species Included in Wildlife Program	yes	no	no	yes	yes	yes

Goshawks. Each alternative would provide a minimum of two goshawk nesting territories per township (total = 75) as prescribed in the Regional Planning Guide (pages 4-13 and 4-14). Nesting territories would measure at least 50 acres in all alternatives. Where overlap with visual corridors, SOHA's, RNA's, and other programs allow, nest territories will measure the desired size of 120 acres.

Additional effects of the alternatives on goshawks can be evaluated by comparing the availability of preferred and suitable habitat (Fowler 1988) Forestwide. Comparative habitat data are shown in Table 4.45.

	PRF	CUR	RPA	CMD	NMK	UNE
Suitable Habitat (Seral Stage 3B/C) (1988 = 174.2)	193.4	210.0	185.0	198.8	199.4	225.4
Preferred Habitat (Seral Stage 4B/C) (1988 = 126.2)	65.5	53.0	56.0	51.9	126.2	80.1
Total Suitable Acres (1988 = 300.4)	258.9	263.0	241.0	250.7	325.6	305.5

Although the spatial arrangement of the habitat is uncertain, Table 4.45 suggests that the NMK alternative is the most beneficial for goshawks because it would provide the largest acreage of suitable habitat and the largest number of preferred acres (4B/C). The NMK alternative would maintain seral stage 3B/C and 4B/C at about current levels. The UNE alternative would reduce preferred habitat by about 35 percent but would maintain total suitable habitat near current acreages. The PRF, CUR, RPA, and CMD alternatives would yield reductions in total suitable habitat of from 10 to 17 percent. These alternatives would reduce the availability of preferred habitat by 50 to 60 percent and yield moderate increases in other suitable stands.

Pine Marten, Fisher, and Sierra Nevada Red Fox The TNF would work closely with neighboring forests, the California Department of Fish and Game, and others to organize a habitat management program for pine marten, fisher, and Sierra Nevada red fox under all alternatives. The program would use the habitat relationships data and habitat management prescriptions developed by the Pacific Southwest Region While the program is being developed, biological evaluations would describe appropriate measures needed to conserve candidate areas for habitat management. Managed habitats would be well distributed in all alternatives. However, potential habitat configurations are presently uncertain because the locations of suitable habitats have not been completely identified and the condition of these lands have not been evaluated on the TNF Moreover, habitat relationships data and management prescriptions are still under development by the Pacific Southwest Region. All alternatives would provide direction to seek cooperative habitat management programs with private land owners where private lands are essential for achieving the Forest habitat management objectives All alternatives would also develop silvicultural practices that may be used to maintain or improve habitats.

Although programs of habitat management would be similar in all alternatives, the management strategy for meadow edges and riparian habitats vary and could affect the quality of these key habitat components. Comparisons of meadow edge and riparian area management are shown in Table 4.46.

TABLE 4.46 - EFFECTS OF THE ALTERNATIVES ON PINE MARTENS, FISHERS, AND SIERRA NEVADA RED FOX

	PRF	CUR	RPA	CMD	NMK	UNE
Meadow Edge Habitat Management Provided	yes	no	no	no	yes	yes
Riparian Area/SMZs Exceeds MMR	yes	no	no	no	yes	yes

Table 4.46 indicates that the PRF, NMK, and UNE alternatives provide additional assurances that viable populations of pine marten, fisher, and Sierra Nevada red fox would be maintained over the planning period. These alternatives would manage for wildlife habitat emphasis those areas that extend 100 feet from the edges of meadows exceeding one acre in size. The PRF, NMK, and UNE alternatives also provide less intensive commodity resource management (timber harvest) in riparian areas and streamside management zones. The CUR, RPA, and CMD alternatives would not provide wildlife habitat emphasis at meadow edges and would produce more intensive commodity resource use in riparian areas and streamside management zones.

Harvest Species

The effects of the alternatives on harvest species is dependent on the mix of important habitat features over time. Generally, alternatives that yield large quantities of early succession stages (PRF, RPA, and CMD) would produce the most favorable conditions for associated species such as mountain quail and deer. However, favorable conditions would only be provided if site preparation and other activities in managed stands maintain adequate forage and cover.

Species associated with hardwoods (e.g., gray squirrel, black bear, band-tailed pigeon, and deer) would be impacted least by the alternatives that retain relatively large hardwood components in regenerated stands (PRF, NMK, and UNE). Conversely, alternatives that considerably reduce hardwoods in regenerated stands (CUR, RPA, and CMD) would have the largest potential for adverse impacts to these species.

C. MEANS TO MITIGATE ADVERSE IMPACTS

The Forest planning process incorporates many mitigation measures to minimize adverse environmental effects under any alternative. The National Forest Management Act regulations require that the management of all resources that National Forest System lands are managed under the principles of multiple use and sustained yield. The management direction common to all alternatives provides for mitigation of major adverse impacts associated with management activities.

Management direction common to all alternatives includes:

1. Minimum management requirements (MMR's) (EIS, Chapter 2, Section E).
2. Timber policy requirements (EIS, Chapter 2, Section E).
3. Minimum implementation requirements (MIR's) (EIS, Chapter 2, Section E).
4. Forest constraint (EIS, Chapter 2, Section E).
5. Forestwide standards and guidelines (S&G's) (summarized in EIS, Chapter 2, Section E; full detail in Plan, Chapter V).
6. Management prescriptions (summarized in EIS, Chapter 2, Section E full detail in Plan, Chapter V).

Some slight differences among alternatives occur to the degree that Forestwide S&G's are incorporated, e.g., SMZ's are managed at the MMR level under Alternatives CUR, RPA, and CMD, whereas Alternatives PRF, NMK, and UNE manage the SMZ's using Forestwide S&G's 46 and 47, these differences reflect each alternative's theme, are described in each alternative writeup in Chapter 2, Section E, and the consequences are disclosed in Chapter 4.

D. ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

Some adverse consequences cannot be avoided despite the application of mitigating measures. The magnitude of such effects varies with the emphasis of the alternative. The adverse effects identified are disturbance or destruction of cultural resources and endangered and sensitive plant species, wildlife habitat, loss of wetlands, and lowering of local water quality, visual quality, and air quality. None of the adverse environmental effects are specific to individual alternatives. The degree of risk or adverse effects varies by alternative.

Cultural Resources. Alternatives PRF, CUR, RPA, CMD, and UNE are estimated to have the greatest potential to disturb or destroy cultural resources. Alternative NMK would have the lowest potential. The likelihood of damaging cultural resources is determined by the number of acres proposed for ground-disturbing practices and the number of cultural resource sites inadvertently missed during pre-project activities (see Table 4.1 9). Sites are usually missed because of thick duff layers and dense vegetation. The disturbance or destruction of cultural resources also would be considered an irreversible loss.

Sensitive Plants. Alternatives PRF, CUR, RPA, CMD, and UNE are estimated to have the greatest potential to disturb endangered and sensitive plant species and their habitats because of project activities and increased human use. Some plant species and their habitats may not be identified (obscured by heavy vegetation, poor flowering years, etc.) during the inventory and could be destroyed. However, sensitive plants occupy relatively few acres and are scattered across the TNF. Several sensitive plants on the Forest do not occur on timbered land, and, therefore, risks are further reduced.

Wildlife. The most significant unavoidable effect on wildlife is estimated to be the development and vegetative manipulation that would occur on and adjacent to the Forest. Those alternatives with the largest timber programs and resulting road construction, along with proposed recreation development, would permanently remove wildlife habitat from production.

Wetlands Minor amounts of wetlands would be unavoidably lost because of road construction. Specific information about wetland locations is lacking until site-specific analyses are performed. The risk of loss would increase with the miles of road construction (see Table 4.13). Alternatives PRF, CUR, RPA, CMD, and UNE would have the largest amount of road construction and the greatest potential to damage wetlands, and Alternative NMK the lowest.

Watershed (Soil and Water). Any type of land disturbance (construction, vegetation manipulation) would have at least temporary and localized effects on the soil despite the application of erosion and water quality control measures and the avoidance of highly erosive soils. If bodies of water are nearby, water quality effects would also be expected. Areas maintained free of vegetation, such as roads and trails, would be constant potential sources of erosion and sediment. OHV use in open areas and alpine ski area development would reduce vegetation, increase erosion, and affect water quality regardless of preventive measures.

Visual Quality All alternatives would reduce the visual quality of the Forest to varying degrees, depending upon the extent of timber harvest, road construction, and prescribed wildlife habitat burning. Visual changes would be managed within acceptable limits of planned VQOs.

Air Quality. Alternatives CUR, RPA, and CMD would generate the most short-term reduction of air quality, due to dust, smoke, and auto emissions. Alternatives PRF, NMK, and UNE would generate progressively less short-term reductions of air quality. Airborne particulate matter under all alternatives would be below the 100 microgram per square meter for a 24-hour period allowed by the State for Class II areas.

E. RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The relationship between the short-term uses of the human environment and the maintenance and enhancement of long-term productivity is complex. Short-term uses are generally those that occur on an annual basis, such as livestock grazing as a use of the forage resource, hunting as a use of the wildlife, or the harvesting of timber.

Long-term productivity refers to the continuing ability of the land to produce commodities and retain amenity values for the benefit of future generations. This ability depends upon management practices that do not allow for the impairment of soil productivity, the overtaxing of water resources, or the alteration of the natural landscape beyond its ability to recover. The long term is, for Forest planning purposes, defined as exceeding fifty years.

The planning alternatives have been evaluated for cumulative and long-term effects. Much of the specific direction and the Forestwide standards and guidelines are directed toward maintaining long-term productivity. Under all alternatives, unavoidable effects and irretrievable resource commitments would occur that affect long-term productivity, such as development of ski areas, construction of arterial and collector roads, and the development of mineral and energy resources. Management decisions, therefore, must ultimately be based on the capability of the land, rather than the urgency of short-term needs.

Alternatives PRF, NMK, and UNE should maintain and enhance the long-term productivity of the soils, maintain water quality, and provide for improving populations of all species on the Forest. Alternatives CUR, RPA, and CMD would maintain long-term soil productivity, water quality, and viable populations of wildlife at about existing levels.

F. IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

Each alternative commits resources to certain uses depending upon its management emphasis, which may preclude these resources from other uses. For example, committing forage to domestic livestock use makes it unavailable for wildlife. These resource commitments are expressed in the differences in outputs between alternatives (see Table 2.12). The major irretrievable resource commitments are those associated with the construction of facilities, and vegetative manipulation in current roadless areas. Approximately four acres of land productivity are irretrievably **lost** with each mile of local road construction, and seven acres with each mile of arterial or collector road construction (see Table 4.13). Differences in the effects of road construction between alternatives are slight, because most of the Forest is already fully accessed.

The extraction of minerals, gravel, and rock and the disturbance or destruction of cultural resources are irreversible resource commitments. Reliable data on the amount of extraction of mineral resources are not available. The rate of mineral extraction should not differ significantly between alternatives. The extraction of gravel and rock may vary slightly in response to the total miles of road to be constructed but would not be expected to differ greatly between alternatives over the 5-decade planning period. The withdrawal of lands from mineral entry is an irretrievable commitment (subject to valid existing rights) until management direction changes. Administrative sites and dam construction are considered irreversible because of the long-term land and resource commitments, though site-specific analysis would be required before allocating areas to these facilities.

The energy used to implement each of the alternatives is also considered an irreversible resource commitment.

The likelihood of disturbing or destroying cultural resources varies by alternative (see Table 4.19). Alternatives PRF, CUR, RPA, **NMK**, and UNE have a moderate probable likelihood of disturbance, and Alternative CMD has a high chance of disturbance.

Alternatives PRF, CUR, RPA and CMD would have the highest likelihood of disturbance or destruction to endangered and sensitive plant species and their habitat. **The** destruction of these populations would be considered an irreversible **loss**.

In terms of land alteration, the decision to allocate unroaded areas to semi-primitive recreation use and forego their timber values during the planning period is not an irreversible decision. Conversely, the decision to commit presently unused areas to resource production may be irreversible in terms of precluding some types of future recreational uses. Within the next Plan a new or continued commitment of these resources would occur, based on technology, cost of and needs for resource production, and the trends of recreation demand.

G. POSSIBLE CONFLICTS WITH FEDERAL, REGION, STATE, AND LOCAL LAND USE PLANS

No known conflicts exist between Federal, regional, State, and local planning and the Tahoe National Forest land management planning.

H. ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

Energy is consumed in the administration and use of natural resources from National Forest System lands. For the purpose of this EIS, energy sources are gasoline, diesel fuel, liquefied petroleum, natural gas, electricity, wind, and wood. The main activities that consume energy are timber management, range management, recreation (both dispersed and developed), road construction and reconstruction, and administrative activities of the Forest Service (Table 4.47).

Energy consumed in timber harvesting is the estimated amount required for felling, bucking, skidding, loading, hauling, post sale practices, performing road maintenance commensurate with the volume hauled, and the industrial traffic associated with the logging activities.

Energy consumed in managing range vegetation is the estimated amount required for hauling domestic livestock to and from the range, for permmee range improvement practices, and for other practices such as salting and herding.

Recreation-related energy consumption is based on the estimated number of dispersed and developed recreation visitor days and estimated trip lengths.

Energy consumed in road construction and reconstruction activities is that amount used by timber purchasers or public works contractors performing road development and maintenance work.

Energy consumed by Forest Service administration includes vehicle use for all administrative activities; building lighting, heating, and air conditioning; road maintenance and construction projects performed by Forest Service personnel; and fuel used for small engines and burners.

The following factors were used to compute energy requirements for each alternative:

Forest Users The average distance traveled by recreationists, average party size, and average length of stay were determined for developed site, dispersed area, and the North Fork American Wild River users Permittee travel distance needed to manage livestock and average AUMs per permit were used to compute **BTU's** per AUM. Separate calculations were made for felling, bucking, skidding, loading, and hauling of timber. Road construction, clearing, excavation, compaction, and drainage requirements were computed separately by slope classes. Energy requirements for road maintenance by timber purchasers and cooperators were based on calculations for the Forest Service doing similar work.

Forest Service. Forest Service energy expenditures were based on actual gallons of gasoline, diesel, heating fuel, aviation fuel, liquefied petroleum gas, cubic feet of natural gas, and kilowatt hours of electricity used in fiscal year 1979. Consumption was computed for recreation, range, timber, engineering, reforestation, cultural treatments, and burning.

The TNF can produce energy from four areas: (1) water flows converted to hydroelectric power, (2) geothermal, (3) wood fiber burned for fuelwood, and (4) wind.

The potential for hydroelectric power and geothermal has been noted in Chapter 3. Proposals for their development come from outside sources to which the Forest Service responds. Because of this, the potential for development is expected to be relatively similar for all the alternatives.

No data are available for wind energy potentials.

Wood Energy and Biomass

Potential wood fiber energy data are displayed in Table 4.47 for each alternative. The data indicates cubic feet, cords, and billion BTU's based upon the 1980 timber inventory, FORPIAN harvest schedules, and conversion factors for equivalent BTU's. The potential wood fiber energy is displayed by four categories: the potential contained in (1) the merchantable bole from the regulated harvest volume; (2) cull material, unutilized bole, and the tops and limbs to three-inch diameter (referred to as unmerchantable: this volume is not merchantable as sawlogs and is part of the unregulated volume); (3) totals of 1 and 2; and (4) fuelwood available for individual firewood gatherers. The fuelwood available to firewood gatherers is based upon unmerchantable wood adjacent to roads and cull logging material decked by the timber purchasers. Approximately 77 percent of this firewood is from cull decks. The remainder is hardwoods, tops and limbs, and precommercial thinning material.

Conservation

Future technological advances could provide for efficient, economical applications for wind, solar, and geothermal energy resources. These undeveloped resources would reduce demand for more traditional energy resources such as oil, coal and shale, nuclear, and hydroelectric power. Thus, a potential exists to conserve energy locally. Specialized energy conservation systems would be applied at the project level. Facility energy surveys and conservation retrofits were accomplished in 1983 and 1984.

TABLE 4.47 * AVERAGE ANNUAL ENERGY CONSUMPTION FOR THE FIRST DECADE IN BRITISH THERMAL UNITS (MILLION BTU'S)

PROGRAM	ACTIVITY	UNIT OF MEASURE	ENERGY COEFFICIENT 1/	PRF	CUR	RPA	CMD	NMK	UNE
RECREATION	Developed	MRVD 2/	0.915	2,075	2,075	2,075	2,075	2,075	2,075
	Dispersed	MRVD	1,303	1,906	1,906	1,906	1,906	1,906	1,906
	Off-highway	MRVD	1,303	1,906	1,906	1,906	1,906	1,906	1,906
	Trail const	Mile	1.121	157	185	232	81	157	157
TIMBER	Tractor	MMCF 3/	6,063	89,830	121,888	107,315	123,123	62,818	76,638
	Cable	MMCF	6,450	27,100	36,765	50,310	37,144	18,951	10,185
	Helicopter	MMCF	17,995	11,938	16,196	19,795	16,362	8,348	10,185
FACILITIES	Roads New const. 4/	Mile	1,583 4/	28,969	44,324	41,751	42,741	35,934	42,266
	Roads Reconstruction 4/	Mile	527 4/	18,445	25,236	24,769	24,769	21,080	24,242
	Road Maintenance 4/	Mile	87 4/	41,830	47,154	45,633	45,633	35,441	41,070
	Administrative -building -vehicles	Typical Year	10,719 8,260	10,719 8,260	10,719 8,260	11,791 9,086	10,719 8,260	10,719 6,260	10,719 8,260
TOTAL				243,135	316,652	316,609	314,719	207,595	229,609

The coefficient is used to convert the unit of measure to Million BTU's

MRVD - Thousands of Recreation Visitor Days

MMCF - Millions of Cubic Feet

4/ Road systems = arterial + collector + local, all functions (timber, recreation, etc)

TABLE 4.48 * POTENTIAL ANNUAL WOOD ENERGY FROM MERCHANTABLE AND UNMERCHANTABLE WOOD FIBER IN THE FIRST DECADE

	PRF	CUR	RPA	CMD	NMK	UNE
MERCHANTABLE						
M Cubic Feet	22,217	26,671	26,615	27,798	15,576	18,120
M Cords	278	333	333	347	195	227
Billion BTU's 1/	5,554	6,668	6,654	6,950	3,900	4,530
UNMERCHANTABLE						
M Cubic Feet	3,685	4,121	4,112	4,499	2,624	2,799
M Cords	46	51	51	56	33	35
Billion BTU's 1/	921	1,030	1,028	1,125	657	700
TOTAL WOOD ENERGY						
M Cubic Feet	25,902	30,792	30,727	32,297	18,200	20,919
M Cords	324	384	384	403	228	262
Billion BTU's 1/	6,475	7,698	7,682	8,075	4,557	5,230
FUELWOOD AVAILABLE FOR FIREWOOD GATHERERS						
M Cubic Feet	2,763	3,091	3,084	3,374	1,968	2,099
M Cords	35	37	39	42	25	26
Billion BTU's 1/	691	773	771	844	492	525

1/ BTU's British Thermal Units, M -Thousand



Charles LaRue, Forest Clerk, 1913

CHAPTER 5 LIST OF PREPARERS

The Interdisciplinary (ID) Team of Forest Service specialists developed and coordinated the planning activities for the Forest Plan beginning in **1979**. All resource disciplines were integrated according to multiple use principles. These people were selected because of their expertise and ability to respond to the major issues being analyzed during the planning process. Other specialists inside and outside the Forest Service assisted the team when special needs arose

The following were the primary duties of the ID Team:

1. Coordinate and integrate planning activities, including public participation.
2. Integrate all physical, biological, social, and economic disciplines into the planning process
3. Identify and analyze the problems and opportunities associated with providing a range of goods and services.
4. Coordinate Forest planning with the planning of local, State, other Federal agencies, and with adjacent landowners.

The Forest Interdisciplinary Team and their qualifications are as follows:

FRANK WALDO
Deputy Forest Supervisor
(1985 to present)

Frank represented the Forest Supervisor and District Rangers on the team. He received his B.S. in Forestry (1962) at New York State College of Forestry, Syracuse University. He has served on four National Forests and at the Regional Office.

RICHARD APPLE
Operations Research
Analyst/Forester
(1987 to present)

Rich provided expertise in developing and analyzing economic data. He received his B.A. in Economics from the University of Iowa (1969) and M.S. in Forestry (1983) from the University of Minnesota. He has served on two National Forests.

DONALD BEHRENS
Forest Range Conservationist
(1979 to present)

Don provided expertise in the interaction of the range science, sensitive plants, and plant ecology aspects of the Forest planning process. He received his B.S. in Range Management (1967) from Colorado State University. Don has served on three National Forests in California as both forester and range conservationist.

MIKE CHAPEL
Wildlife Biologist
(1986 to present)

Mike provided expertise in wildlife biology, including threatened and endangered animal species. He received his B.A. and M.A. in Biology in 1973 and 1977 from Fresno State University. He has served on two National Forests.

JOHN CORBETT
Lands Staff Officer
(1979 to present)

John provided expertise in lands adjustment (exchange and purchase), mineral area management and special uses. He received his B.S. in Forestry (1960) from the University of Connecticut and has completed postgraduate work in real estate. John has served on the Tahoe National Forest and is a professional forester licensed by the State of California.

PHILIP HORNING
Forest Landscape Architect
(1987 to present)

Phil provided expertise in recreation, special interest areas visual, and cultural resource management. He received a Bachelor of Landscape Architecture (1969) from the College of Forestry and Environmental Science at Syracuse, New York. He has served on four National Forests in California and a State Forest in Australia.

DENNIS KNAPP
Truckee District Engineer
(1987 to 1989)

Dennis provided expertise in civil engineering, energy conservation and transportation planning and analysis. He received a B.S. in history and has done graduate work in international affairs. He has served on two National Forests.

JANE LABOA
Forest Silviculturist
(1988 to present)

Jane provided expertise in timber management which includes silvicultural practices, timber harvest, and integrated pest management activities. She received her B.S. in Forest management (1972) from the University of California at Berkeley. She has served on three National Forests and is a registered professional forester in California.

DAVID NELSON
Fire Management Officer
(1988 to present)

Dave provided expertise in the planning process and coordinated the process. He was also responsible for fire management analysis and its integration into the planning process. He received his BS (1959) in Forestry from Iowa State University. Dave has served on three National Forests.

ROGER POFF
Soil Scientist
(1988 to present)

Roger provided expertise in soil management. He received his B.S. in Agriculture from the University of Wisconsin - River Falls (1960). He did graduate work in soil science at the University of Minnesota. He is a certified professional soil scientist and a certified erosion and sediment control specialist. Roger has served on National Forests in Montana and California, and is zone soil scientist for three National Forests.

TERRY RANDOLPH
Planning Officer
(1988 to present)

Terry coordinated the completion of the Final EIS and Plan. He received a BS in Forestry (1962) at the University of Idaho. He has served on four National Forests in California, Idaho, Utah, and Nevada.

MICHAEL ZAN
Forest Hydrologist
(1979 to 1989)

Mike provided hydrologic and soils expertise. He received his B.S. in Forestry (Watershed Management) (1966) and a M.S. in Forest Hydrology (1968), both from Utah State University. Mike has served on three National Forests in California.

PAST MEMBERS

GERI V. BERGEN

Deputy Forest Supervisor
(1979 to 1985)

Geri represented the Forest Supervisor and District Rangers on the team. Geri received her B.S. in Forestry (1962) and a M.A. in Botany (1965), both from the University of California, Berkeley. She has served in the Regional Office in San Francisco and at the Pacific Southwest Forest and Range Experiment Stations in Berkeley and Placerville. Geri is a professional forester licensed by the State of California. In January 1985, Geri was promoted to Forest Supervisor of the Tahoe National Forest.

PHILIP AUNE

Forest Silviculturist
(1980 to 1987)

Phil provided expertise in timber management which includes silvicultural practices, timber harvest, and integrated pest management activities. He received his B.S. in Forest Management (1965) from Humboldt State University, Arcata. He has served on four National Forests in California, including an assignment on a Forest Service sponsored study tour of Sweden and Finland to examine silvicultural practices. Phil is a professional forester licensed by the State of California.

GEORGE CADZOW

Team Leader,
Planning Officer
(1979 to 1987)

George provided expertise in the planning process and coordinated the planning process. He served as the liaison with the contractor providing socioeconomic data. He coordinated the RARE II Further Planning Areas. George received his B.S. in Timber Management (1959) from Utah State University and an M.A. in Environmental Planning (1979) from California State University, Chico. He was Associate Professor in fire training at Kansas State University. George has served on five National Forests in California and is a licensed professional forester in the State of California.

JAMES COIL, JR.

Public Information Officer
(1979 to 1981)

Jim was responsible for coordinating public involvement activities and integrating public concerns into the planning process. He received a B.S. in Forestry (1959) from Michigan State University. Jim served on five National Forests in Montana and California and was District Ranger on two Districts.

JOSEPH COLWELL

Land Management Planner
(1979 to 1983)

Joe was responsible for analyzing and coordinating specialists' input and documenting the planning process according to NFMA regulations. He also developed and analyzed economic data. Joe received a B.S. in Wildlife Management (1969) from the University of Idaho and a M.S. in Program and Policy Analysis (1979) from Michigan State University. He served on three National Forests in Colorado and California.

DAVID CONNELL

Wildlife Biologist
(1980)

Dave provided expertise in wildlife biology, including threatened and endangered animal species. He received a B.S. in Wildlife Management (1966) from Humboldt State University, Arcata. Dave served on two National Forests in California.

AARON GELOBTER

Fuels Management Specialist
and District Fire Management
Officer
(1984 to 1988)

Aaron was responsible for fire management analysis and its integration into the planning process. He received his B.S. in Forestry (1980) from the University of Arizona and has served on four National Forests in Arizona and California.

LAURENCE GRUVER
Transportation Planner
(1980 to 1981)

Larry provided expertise in civil engineering, energy conservation, and transportation planning and analysis. He received a B.S. in Civil Engineering (1967) and an M.S. in Transportation Planning (1972), both from U.C. Berkeley. Larry is a California registered civil engineer and also has teaching credentials in math and social sciences (1973). He served on two National Forests in California.

GARY HARTMAN
Forest Wildlife Biologist
(1980 to 1985)

Gary provided expertise in wildlife biology. He received his B.S. in Wildlife Management (1970) from Oklahoma State University. He has served on two National Forests in Texas and California. Gary also served with the U.S. Fish and Wildlife Service in Illinois.

LEE JORDAN
Transportation Planner
(1983 to 1986)

Lee provided expertise in transportation planning, energy conservation, and facilities management. He received his A.A. in Forestry (1963) from Sierra College, a B.A. (1979) and M.A. (1984) in Anthropology, a B.S. in Environmental Resources (1972), and some course work in Construction Engineering Management, all from California State University, Sacramento. Lee has served on the Tahoe National Forest.

RICHARD JUVENAL
Forest Assistant Fire
Management Officer
(1980 to 1984)

Dick was responsible for integrating fuels and fire management into the Forest Plan. He attended Cal-State University at Chico, completing course work in Range Management. Dick served on three National Forests in California.

MARY KING
Recreation Planner
(1984)

Mary provided expertise in recreation, Special Interest and Research Natural Areas, visual, and cultural resource management. She received a B.S. in Forestry (1980) from U.C. Berkeley. Mary served on the Tahoe National Forest.

RICHARD MARKLEY
Forest Archaeologist
(1982 to 1987)

Richard provided expertise in recreation, Special Interest and Research Natural Areas, visual, and cultural resource management. He received both his B.A. (1974) and M.A. (1978) in Anthropology from California State University, Chico. Richard has served on the Tahoe National Forest.

JOHN P. RILEY
Assistant Forest Engineer
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John provided expertise in developing and analyzing economic data. He received his B.S. in Forest Management (1973) and a M.S. in Economics (1982), both from the University of Idaho. John has served on the Tahoe National Forest.

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(1980 to 1982)

George was responsible for recreation, Special Interest and Research Natural Areas, visual, and cultural (archaeological) coordination. George received a B.S. in Forestry (1950) from U.C. Berkeley. He served on the Tahoe National Forest and is a professional forester licensed by the State of California.

MANAGEMENT TEAM

The following individuals guided, reviewed, modified as appropriate, and recommended for approval the work of the Interdisciplinary Team since the inception of the planning process in 1979.

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John H. Holt	Resource Officer, 1979 to 1981
Rob Roy A. MacGregor	Lands Officer, 1979 to 1982
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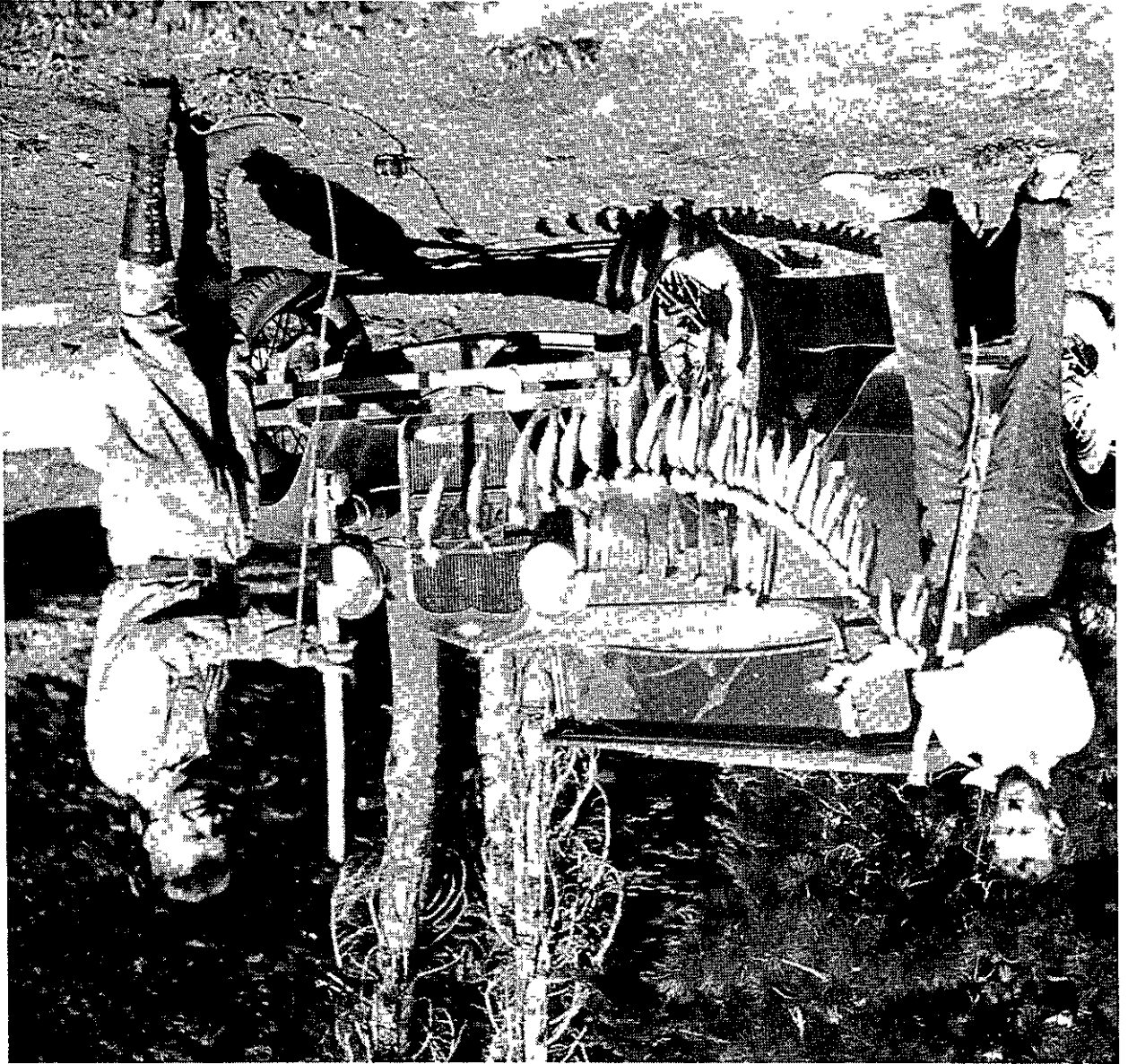
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Socio-economic

David M. Dornbuschand Company, Inc., of San Francisco, under contract with the Forest Service. Socio-economic study. One study concentrated on the Tahoe alone, while the other examined the environment of central Sierra forests.

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LAWRENCE W. KOZIMOR (Responsible for data gathering, interviewing, and developing the overviews Dornbuschand Co., Inc.)

A good string from Lola Montez Lake, 1936



CHAPTER 6 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE FEIS WERE SENT

CONSULTATION WITH OTHERS

Public participation has occurred throughout the Tahoe National Forest (TNF) planning process. Early involvement efforts focused on identification of Forestwide and area-specific issues and concerns. Extensive public involvement and public comment occurred after the Draft Environmental Impact Statement (DEIS) and Draft Forest Plan were published for review. Public concerns and suggestions were analyzed. The Final Environmental Impact Statement (FEIS) and Forest Plan (FP) were modified according to these public concerns. These concerns and Forest Service responses can be found in Appendix A.

MAILING LIST

Copies of the FEIS and FP were distributed or made available to individuals and organizations on the TNF mailing list. This list has been maintained and updated since 1979 when the planning process was initiated. All those who commented on the Draft Forest Plan have been added to this mailing list. Others have been removed via personal request, change of address/returned mail, or failure to mail back the address update cards.

Copies of the FEIS or notices of availability were sent to the following agencies, elected officials, organizations, and libraries. In addition, the documents were sent to a variety of individuals who requested copies. The complete mailing list is on file in the Planning Records located at the Forest Supervisor's Office, Nevada City, California. A list of all those who responded to the DEIS is provided in Appendix A.

ELECTED OFFICIALS

U.S. CONGRESSIONAL REPRESENTATIVES

Senator Pete Wilson
Senator Alan Cranston
Congressman Norm Shumway
Congressman Wally Herger (responded as
Assemblyman Herger)
Congressman Vic Fazio
Congressman Robert Matsui

CALIFORNIA STATE REPRESENTATIVES

Attorney General John K. Van De Kamp
Senator John Doolittle
Assemblyman Chris Chandler
Assemblyman Norm Waters
Assemblyman Lloyd G. Connelly
Assemblyman Byron D. Sher
Assemblyman Sam Farr
Assemblyman Jack O'Connell
Assemblyman Ricahrd Katz
Assemblyman Bruce Bronzan
Assemblyman Thomas Hannigan
Assemblyman Robert Campbell
Assemblyman Peter Chacon
Assemblywoman Lucy Killea
Assemblyman Rusty Areias

Assemblyman Burt Margolin
Assemblyman Richard E. Floyd
Assemblyman Phil Isenberg
Assemblyman Micheal Roos

CITY/COUNTY REPRESENTATIVES

San Francisco Mayor Art Agnos
Auburn City Council
Lincoln City Council
Marysville City Council
Oroville City Council
Yuba City Council
Butte County Board of Supervisors
Nevada County Board of Supervisors
Placer County Board of Supervisors
Portola City Council
Santa Cruz County Board of Supervisors
Sierra County Board of Supervisors
Yuba County Board of Supervisors

FEDERAL AGENCIES

Advisory Council on Historic Preservation
Department of Defense
Department of Health and Human Services
Department of Labor
Environmental Protection Agency
Federal Aviation Administration

Federal Energy Regulatory Commission
Federal Highway Administration
Federal Railroad Administration
General Services Administration
Office of Economic Opportunity
U.S.D.A. Animal and Plant Inspection Service
U.S.D.A. Soil Conservation Service
U.S. D.A. Office of Equal Opportunity
U.S. D.A. Forest Service
U.S. D.O.C. National Oceanic and Atmospheric Administration
U.S. Department of Energy
U.S. Department of Interior
 U.S.D.I. Bureau of Indian Affairs
 U.S.D.I. Bureau of Land Management
 U.S.D.I. Bureau of Reclamation
 U.S.D.I. Fish and Wildlife Service
U.S. Department of Transportation
U.S. Postal Service

CALIFORNIA STATE AGENCIES

Air Resources Board
Dept. of Boating and Waterways
Dept. of Fish and Game
Dept. of Food and Agriculture
Dept. of Forestry
Dept. of Mines and Geology
Dept. of Oil and Gas
Dept. of Parks and Recreation
Dept. of Transportation (CALTRANS)
Dept. of Water Resources
Farm Bureau
Regional Water Quality Control Board:
 Lahontan Region
 Central Valley Region
State Clearinghouse
 Office of Planning and Research
State Lands Commission

NEVADA STATE AGENCIES

Nevada State Forestry Department, Firewarden

LOCAL AGENCIES AND UTILITIES

Alpine Meadows Fire Dept.
Alpine Springs County Water District
Foresthill Forum
Foresthill Telephone Company
Nevada Bell
Nevada County Fish & Wildlife Commission
Nevada County Dept. of Transportation
Nevada County Planning Dept.
Nevada County Resource Conservation District
Nevada County Sheriff's Office
Nevada Irrigation District
Northstar-at-Tahoe Fire Dept.

Pacific Bell
Pacific Gas & Electric
Pacific Telephone & Telegraph
Placer County Dept. of Public Works
Placer County Planning Dept.
Placer County Sheriff's Office
Placer County Water Agency
Plumas County Planning Dept.
Sacramento Municipal Utility District (SMUD)
Sierra City Development Association
Sierra County Dept. of Public Works
Sierra County Planning Commission
Sierra Pacific Power Co.
Squaw Valley Water District
Tahoe City Public Utilities District
Truckee Fire Protection District
Truckee-Donner Public Utility District
Truckee-Donner Recreation & Park District
Truckee-Tahoe Airport District
Washington County Water District
Washoe County Water Conserv. District
Washoe Tribe
Yuba County Board of Supervisors
Yuba County Community Service Dept.
Yuba County Water Agency

INTEREST GROUPS/INDUSTRY

Across California Conservancy
Alliance for Environment & Resources
Alpine Meadows Greenbelt and Recreation Commission
Alpine Meadows Homeowners Association
Alpine Meadows Stables
American Alpine Club
American Fisheries Society
American Forest Products
Animal Protection Institute of America
Association of California Loggers
Audubon Society--Napa Solano Chapter
Berkeley Rod & Gun Club
Bohemia Inc.--Grass Valley
Bohemia Inc.--Eugene, Ore
California Association of 4WD Clubs Inc
California Fly Fisherman Unlimited
California Forest Protective Association
California Licensed Foresters Association
California Native Plant Society
California-Nevada Snowmobile Association
California Save Our Streams Council
California Sportfishing Protection Alliance
California Trout
California Wilderness Coalition Conservation Society
California Women In Timber
Condor Exploration Society
Cordova Hot Shots
Crane Mills

Defenders of Wildlife
Earth Sky
East **West** Fellowship
Far **West** Pro Skiing
Feather River Forest Products
Flower Essence Society
Friends of the River
Group Against Spreading Poisons
Gold Country California Loggers
Gold Country Trails Council
Golden Gate Audubon Society
Grass Valley Sportsmen's Club
Greater North Lake Tahoe Chamber of
Commerce
High Sierra Resource Conservation and
Development Area
Louisiana Pacific Corporation
Marin Conservation League
Mother Lode Miners
Mountain Lion Coalition
National Audubon Society
Nature Conservancy
Nevada County Business Association
Nevada County Chamber of Commerce
Newcastle Area Business Association
North Columbia Schoolhouse Cultural Center
Northeast Californians for Wilderness
North Fork Association
North Star at Tahoe
North Tahoe Snow Travelers
Placer County Conservation Task Force
Planning and Conservation League
Private Industry Council of Butte County
Protect American River Canyons
Rocklin Chamber of Commerce
Ruby Development Company
San Juan Ridge Taxpayers Association
Santa Fe Pacific Realty Corporation
Scenic Shoreline Preservation Conference
Sierra Cascade Logging
Sierra Center for the Preservation of
Biotic Diversity
Sierra Club--Redwood Chapter
Sierra Club-San Francisco Bay Chapter
Sierra Club-San Mateo County Group
Sierra Club-Sierra Nevada Group
Sierra Club--Yahi Group
Sierra County Historical Society

Sierra County Mounted Posse
Sierra Pacific Industries
Sierra Pacific Power Company
Sierra Valley Roping Club
Siskiyou West Inc.
Small Business Forest Producers Association
Society of American Foresters
Squaw Valley USA
Tehama Fly Fishers
Tenco Tractor, Inc.
Trinity Resource Action Council
Truckee-Donner Historical Society
Western States Trail Association
Western Timber Association/Timber
Association of California
Western Wood Products Association
Wildlife Conservancy
Yuba-Sutter Chamber of Commerce

LIBRARIES

Auburn Library
Downieville Library
Grass Valley Library
Loyalton Branch Library
Nevada City Library
North Columbia School House Cultural Center
Sacramento Public Library, Central Library
Sierra Club Library, San Francisco
Sierraville Library
Tahoe City Library
Truckee Library
Washoe County Libraries
Yuba City Library
Yuba County Library

UNIVERSITY LIBRARIES

California State University, Chico,
Meriam Library
California State University, Sacramento
Oregon State University, Corvallis,
Sierra College, Rocklin
University of California, Berkeley
University of California, Davis
University of Nevada, Reno,
Main Library
Life and Health Sciences Library



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Driving lambs to Cisco Grove, 1928

EIS APPENDIX

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APPENDIX B

THE MODELING AND ANALYSIS PROCESS

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APPENDIX B

THE MODELING AND ANALYSIS PROCESS

I. INTRODUCTION

The purpose of this appendix is to present a technical discussion of the analysis process and models used. Basic assumptions, model components and inputs, modeling rules and methods, and modeling constraints imposed along with their rationale and impacts are described in this appendix. Information presented in this appendix supplements the broader and less technical descriptions that are included in the body of the EIS. See Chapter 1, Section C, Planning Process and Chapter 2, Section B, Alternative Development Process, for a description of the overall process, including a description of analysis conducted prior to the formulation of alternatives. See Chapter 2, Section C, for the result of the benchmark analysis, and Chapter 2, Section D, Alternatives Considered in Detail, for discussion of the alternatives. Monitoring of implementation is discussed in Chapter II, Plan Implementation Process, and Chapter VI, Monitoring and Evaluation, of the Forest Plan. The plan implementation process is discussed in Chapter II of the Forest Plan, Plan Implementation Process.

FORPLAN is the primary modeling tool used to assure that land allocations and output schedules for alternatives and benchmarks are made in a way that meets all constraints in the most cost efficient manner possible. In addition to being used to formulate alternatives and benchmarks that are both feasible and cost efficient, FORPLAN is also used to perform detailed accounting work and to generate summary reports of information needed to construct the display tables in the EIS. Additional models are used to generate input data for use in FORPLAN and to interpret output data from FORPLAN. RAMPREP is the growth and harvest model used to make timber yield estimates for use in FORPLAN. The FIREPLAN system was used to estimate the fire organization, activity levels, and fire management costs required to efficiently achieve the program direction for each alternative. An income and employment model was developed, using the Regional Industrial Multiplier System in order to estimate income and employment effects from changes in Forest outputs. The Wildlife Habitat Capability Model was used to estimate effects on wildlife and fish populations because of changes in Forest Vegetation. The Effective Alteration approach employed perspective plot computer simulations to correlate levels of timber harvesting with visual quality objectives. A more detailed description of each of these models is included in this appendix.

II. THE FOREST PLANNING MODEL (FORPLAN)

(See Johnson, K. Norman, Daniel B. Jones, and Brian M. Kent: Forest Planning Model (FORPLAN) User's Guide and Operations Manual, USDA Forest Service, May 1980.)

A. Overview

Identifying the optimum resource allocation and output schedule presents a very complex problem. FORPLAN is a specialized matrix generator and report writer for a standard linear programming algorithm (FMPS). (FMPS is the acronym for Functional Mathematical Programming Subsystem, the linear programming code used on the UNIVAC 1100 Series Computer.) Linear programming is a standard mathematical technique for solving simultaneous linear equations subject to a certain set of constraints and a particular objective function.

This is expressed mathematically as.

Maximize: $z = c_1x_1 + c_2x_2 + \dots + c_nx_n$ (Objective function)

Subject to: $a_{11}x_1 + a_{12}x_2 + \dots + a_{1n}x_n > b_1$

$a_{21}x_1 + a_{22}x_2 + \dots + a_{2n}x_n < b_2$ (Constraint Set)

$a_{m1}x_1 + a_{m2}x_2 + \dots + a_{mn}x_n \leq b_m$

$x_i > 0$

These mathematical expressions can also be shown in the following matrix:

	Column j=1	Column j=2	Column j=3	Column j=n	Constraint Type	Right Hand Side Constraint
Objective function	C_1X_1	C_2X_2	C_3X_3	C_NX_N		.Maximize
Row i = 1 (Timber)	$a_{11}x_1$	$a_{12}x_2$	$a_{13}x_3$	$a_{1n}x_n$	>	b_1
Row i = 2 (Land)	$a_{21}x_1$	$a_{22}x_2$	$a_{23}x_3$	$a_{2n}x_n$	<	b_2
Row i = m	$a_{m1}x_1$	$a_{m2}x_2$	$a_{m3}x_3$	$a_{mn}x_n$	\leq	b_m
				x_j	>	0

In the FORPLAN formulation, the linear equations (rows) represent resource production functions, costs, and acreage or other types of constraints (for example, row 1 might represent timber production; row 2 might represent total suitable acres; row M might represent acres burned by wildfire). The columns ($j = 1 \dots n$) represent the different activities (prescriptions) which can occur over time on specific units of land called analysis areas (represented by x_j). The a_{ij} 's in the matrix are the production, cost, or resource coefficients associated with each prescription/analysis area combination. The b_i 's are the right-hand-side constraints representing exact amounts ($=$) or upper ($<$) or lower ($>$) constraint levels that must be met. In the example above, if row 1 represents timber production, the interpretation of the constraint—

$a_{11}x_1 + a_{12}x_2 + a_{13}x_3 + \dots + a_{1n}x_n > b_1$

would be the "total amount of timber produced from all prescriptions and analysis areas must be greater than or equal to the amount b_1 ".

The FORPLAN model was built by representing the production functions, costs, values, and resource supplies for the Forest in the mathematical format described above. For the Tahoe National Forest, the resulting model contained approximately 28,000 columns and 2,500 rows. Once the model was formulated, a number of test runs were made to check the model for reasonableness and to make additional calibrations. Land allocations, activity and output schedules, costs, benefits, and present net value were developed by altering the objective function and constraint set to meet the theme of each alternative and benchmark and then running the model.

Unique constraint sets were developed to represent minimum management requirements, minimum implementation requirements, Forest discretionary constraints common to all alternatives, and specific land allocations and output schedules needed for individual alternatives. An iterative process

was used to formulate these constraint sets prior to making final FORPLAN runs for the alternatives and benchmarks.

FORPLAN was used to determine the most cost efficient mix of goods and services that could be produced from the Forest given the objectives and constraints of each alternative. The trade-offs made among alternatives were examined and the costs and benefits associated with each objective or constraint measured. This analysis provided a way of indirectly evaluating the non-priced benefits by measuring the amount of present net value (PNV) foregone. The final criterion used to evaluate alternatives was net public benefits (NPB), which is the PNV plus consideration of nonquantifiable Forest resource benefits. Economic efficiency is discussed in more depth in Appendix D and the EIS, Chapter 3, Section C, The Economic Environment, and Chapter 4, Section B, The Economic Consequences.

Management activities modeled in FORPLAN were determined by the Interdisciplinary Team and approved by the Management Team (All Interdisciplinary Team (IDT) proposals were approved by the Forest's Management Team, comprised of District Rangers and Staff. Further mention of the IDT actions also assumes approval by the Forest Management Team.). This pre-FORPLAN analysis included investigating

1. The activities that could be applied to National Forest System land.
2. Those activities that could be modeled in FORPLAN
3. The kinds of land to which each activity could be applied.
4. The costs, outputs, and benefits which would result from the application of each activity to a specific type of land
5. The compatibility of activities when applied to the same land area.

This investigation provided the basis for a matrix of all possible management activities which could be modeled and their associated costs, outputs, and benefits.

Activities which were desired but not modeled as one of the above FORPLAN inputs required the use of additional constraints

The post-FORPLAN analysis took two forms. First, activities that could not be modeled (such as watershed improvement) were analyzed and added to the prescriptions if they increased net public benefits. Second, the alternatives were ground checked to insure their implementability.

B. Land Units

Capability areas are the smallest unit of land (or water) used in forest planning. They are discrete and recognizable units classified primarily according to physical (e.g., soil, watershed), biological (e.g., vegetation), and administrative (e.g., county lines, Forest boundary, North Fork American Wild River, Granite Chief Wilderness) factors. All land within a capability area is homogeneous in its ability to produce resource outputs and in its production limitations. The Tahoe National Forest has about 26,000 capability areas.

Capability areas were developed by overlaying existing map information. The Wildland Resource Information System (WRIS) was used to calculate capability area acreages and to number each area for identification in the data base (Forest Planning File). The Forest decided what information was needed for each capability area to assess resource opportunities and public issues and then collected that information about each area. Different resource attributes were determined for each capability area. See TNF's Planning File for detailed discussion of resource data collected. This information was entered into a computerized data base system. (The TNF database is maintained in-house through DATATRIEVE and DataGeneral software.) Once entered into the system, information on capability areas could easily be retrieved, sorted, aggregated, and analyzed.

The delineation of the capability areas required several steps. First, each resource specialist on the ID Team decided which physical or biological attributes in the data base were necessary to

determine their resource yields. The selection of which resource outputs to monitor in FORPIAN was guided by the problems identified by the Forest issues, concerns, and opportunities.

Because of their large number, individual capability areas could not be used in FORPLAN. Use of such a large number of land units would be cumbersome, expensive, and would have exceeded the matrix size limits that can be utilized in FORPLAN. Analysis areas were created to handle this problem. Analysis areas are an aggregation of like capability areas with sufficiently similar physical, biological, and administrative conditions such that they would probably respond in a like manner to management activities. Each capability area was given an analysis area identifier so the database could be queried for the land information needed to build the FORPLAN model.

Next, the analysis areas were defined using each attribute proposed by the resource specialists as a level of stratification, or level identifier in FORPLAN. Because FORPLAN could accommodate only six level identifiers, the number of attributes initially selected by the resource specialist was greater than could be used. This forced the ID Team to select the most critical attributes necessary to address the planning problems and to consider the reliability of the data for making yield and cost estimates.

The criteria needed to develop analysis areas are the level identifiers in FORPLAN. The level identifiers used are shown in Table B.I.

Data reliability and the need to respond to issues related to specific geographic areas (i.e., Research Natural Areas) played a major role in the delineation of analysis areas. In many cases, the data reliability for capability areas were aggregated into individual analysis areas. The need to maintain the geographic identity of some individual capability areas limited the amount of aggregation that could occur. The Tahoe National Forest database has a total of about 60 analysis areas, based on actual National Forest System acres, and 20 analysis areas not representing real acres, such as wildlife habitat improvement projects, facilities management, fire programs, and dispersed recreation.

TABLE B.I - LEVEL IDENTIFIERS USED IN FORPIAN

LEVEL	CODE	NAME	DESCRIPTION
LEVEL 1. ISSUES AREAS*FOREST ICO & PROGRAM AREAS*	M2	REGEN2	M2 MODEL 2 TRANSFER AA'S
	NF	FOREST	NF. FOREST-WIDE ACTIVITY-OUTPUTS (AREA=FOREST)
	FP	FIR-PR	FP FFP FIRE PROGRAM - FORESTWIDE
	RP	RGN-PR	RP RANGE PROGRAM - IMPROVEMENTS
	WP	WLF-PR	WP: WILDLIFE PROGRAM - IMPROVEMENTS
	RC	REC-PR	RC RECREATION PROGRAM - IMPROVEMENTS
	DS	DESIGN	DS DESIGNATED-CLASSIFIED AREAS FIX ALLOCATIONS
	GF	GENFOR	GF: GENERAL FOREST - OPEN ALLOCATION
	SA	SOMA-A	SA SPOTTED OWL MANAGEMENT AREA A -
	SZ	-SOMA-	SZ. FORESTWIDE SOMAS A - X
	R1	FR&T-1	R1: FIXED ROAD & TRAIL CONST - PERIOD 1
	R2	FR&T-2	R2. FIXED ROAD & TRAIL CONST - PERIOD 2
	R3	FR&T-3	R3. FIXED ROAD & TRAIL CONST - PERIOD 3
--	-----	--: NOT ONE OF THE ABOVE (NULL)	

AGGREGATES FOR LEVEL

COMPONENTS
GENFOR
DESIGN

LEVEL	CODE	NAME	DESCRIPTION
LEVEL2: -ECON- ZONES*ECONOMIC ZONES & ICO OVERLAPS*	Z1	ECN-Z1	Z1: ECONOMIC ZONE #1 UNROADED
	Z2	ECN-Z2	Z2: ECONOMIC ZONE #2 PARTIAL ROADED
	Z3	ECN-Z3	Z3: ECONOMIC ZONE #3 80-% + ROADED
	GC	GRCHWA	GC GRANITE CHIEF WILDERNESS
	WR	WILDRV	WR: NORTH FORK OF AMERICAN WILD RIVER (95-625)
	SU	SP-USE	SU: SPECIAL USE PERMITTED AREAS GREATER THAN 20-ACRES
	DR	DEVREC	DR: DEVELOPED RECREATION SITES (NONSKIING)
	SK	SKIING	SK: EXISTING SKI AREAS UNDER PERMIT
	OW	SOMA-	OW SPOTTED OWL HABITAT AREAS
	--	-----	---, NOT ONE OF THE ABOVE (NULL)

AGGREGATES FOR LEVEL2

9D ALLDEV

9D DEVELOPEDRECARES

COMPONENTS

DEVREC

SKIING

LEVEL	CODE	NAME	DESCRIPTION
LEVEL3: -SUIT- -TYPE- * TBR SUITABILITY & TYPE OF AA*	M2	REGEN2	M2 MODEL 2 TRANSFER AA'S
	MI	MILES-	MI: MILES
	CP	CAPCN	CP: PERCENT CAPACITY USED
	PR	PROGRM	PR: PROGRAM - PROJECTS - ETC.
	NA	NOTAVL	NA LANDS NOT AVAILABLE FOR TM HARVEST
	US	UNSUIT	US: LANDS NOT SUITABLE-AVAILABLE-CAPABLEFOR TM HARVEST
	NS	NONSTK	NS: CONIFERS SITES NOT STOCKED (BRUSH OR HWD)
	T1	CCSWTH	T1: LANDS SUITABLE FOR CCSW-TH-UE
	T2	CCSW-	T2: LANDS SUITABLE FOR CCSW-UE
	T3	SW-UE	T3: LANDS SUITABLE FOR SW-UE
	T4	UE---	T4: LANDS SUITABLE FOR UE-EXTENSIVE MGNT ONLY
	T5		T5: LANDS SUITABLE FOR SPECIAL TREATMENT RX'S
	T9	INT-SP	T9: INTERMEDIATE HARVEST ON OVERLAPPING ACRES
	TS	TR-SEL	TS: LANDS STRATIFIED FOR TREE SELECTION
	TG	GRSEL	TG: LANDS STRATIFIED FOR GROUP SELECTION
--	-----	---; NOT ONE OF THE ABOVE (NULL)	

AGGREGATES FOR LEVEL

92 T1&&T2

92 A T1-T2

COMPONENTS

CCSWTH

CCSW-

GR-SEL

CCSWTH

CCSW-

GRSEL

SW-UE

93 T1T2T3

93 AGG T1-T2-T3

94 T1==T4

94 AGG T1 THROUGH T4

CCSWTH

CCSW-

GR-SEL

SW-UE

UE---

95 T1==T5

95 AGG T1 THROUGH T5

CCSWTH

CCSW-

GR-SEL

SW-UE

UE---

EXT-SP

9F FOR-AC

9F FORESTED ACRES

CCSWTH

9T TMSUIT 9T: TIMBER SUITABLE & AVAILABLE LANDS

9N AGGUNS 9N: LANDS UNSUITABLE OR NOT CAPABLE FOR
TIMBER MANAGEMENT

CCSW-
GR-SEL
SW-UE
UE---
NONSTK
TR-SEL
UNSUIT
CCSWTH
CCSW-
GRSEL
SW-UE
UE---
NONSTK
TRSEL

NOTAVL
UNSUIT

LEVEL	CODE	NAME	DESCRIPTION
LEVEL4: FOREST -TYPE-*VEGETA- TIONAL TYPES*	XX MC PP	--XX-- --MC-- PP-JP E-PINE --RF-- --DF-- SUBAPL -LPP-- --HW-- CHAPRL GRASS- NON- FOR -FR&T- SITE- -___	M : AGG TYPES MC: MIXED CONIFER TYPE PP: PONDEROSAJEFFREYPINE TYPE EP: EASTSIDE PONDEROSAJEFFREY PINE TYPE RF: RED FIR TYPE DF: DOUGLAS-FIR TYPE SA : SUBALPINE TYPES (WWP-MH-ETC) LP: LODGEPOLE PINE TYPE HW: HARDWOOD TYPE ON CONIFER SITE BR: BRUSH-CHAPARREL GR: GRASS-RANGELAND NF: NON-FORESTEDLANDS - LESS 5% FORESTED RT: FOREST ROADS AND TRAILS MGNT DS: DEV RECREATIONAND OTHER IMPROVED SITES --: NOT ONE OF THE ABOVE (NULL)

AGGREGATES FOR LEVEL4
OF NON-RF 0 F N P E S OTHER THAN -RF-

COMPONENTS
- M G
--HW--
E-PINE
-LPP--
- M G
--RF--
E-PINE
-LPP--
E-PINE
GRASS
--DF--
- M G
--RF--
--HW--
--XX--

9G GRSELT 9G: N P E S SUITABLE GROUP SELECTION

9L LIVFOR 9L: N P E S SUITABLE FOR FORAGE PRODUCTION

9O OWTYPE 9 O SUITABLE FOREST TYPES FOR S-OWLS

LEVEL	CODE	NAME	DESCRIPTION
LEVEL5: -COND- CLASS *CONDITION CLASS OR STRUCTURE	PL	RGN-PL	PL: REGENERATION PLANTATIONS- EVEN-AGED MGNT
	TS	RGN-TS	TS: REGENERATED TREE SELECTION OR GROUPS
	IR	IN-RGN	IR: IN THE PROCESS OF REGENERATION
	BR	--BR--	BR: BRUSH
	HW	--HW--	H W HARDWOOD STANDS
	P1	--P1--	P1: PLANTATION LESS 10YRS - DISP OPENING
	P2	--P2--	P2: PLANTATION GREATER 10YRS - DISP NOT OPENING
	1X	-1X-	1X. SEEDING (NOT PLANTATIONS)
	2N	--2N--	2N: SAPLINGS
	3S	--3S--	3S: SMALL SAWTIMBER < 20% CROWN CLOSURE
	3P	--3P--	3P. SMALL SAWTIMBER >20 - < 40% CROWN CLOSURE
	3N	--3N--	3N: SMALL SAWTIMBER >40% - <70% CROWN CLOSURE
	3G	--3G--	3G: SMALL SAWTIMBER > 70% CROWN CLOSURE
	3X	--3X--	3X: SMALL SAWTIMBER > ALL CROWN CLOSURE
	4P	-4P-	4P: LARGE SAWTIMBER < 40% CROWN CLOSURE
	4N	4N--	4N: LARGE SAWTIMBER >40% - <70% CROWN CLOSURE
	4G	--4G--	4G. LARGE SAWTIMBER > 70% CROWN CLOSURE
	4x	--4X--	4 X LARGE SAWTIMBER > ALL CROWN CLOSURE
	6G	--6G--	6 G LARGE SAWTIMBER IN MULTI-STORE STANDS
	XP	--XP--	XP SAWTIMBER IN POORLY STOCKED STANDS
	XX	AGG-CC	XX: AGGREGATED CONDITION CLASS (SIZE DENSITY)
	NF	--NF--	N F NON-FORESTED
	NS	UNSTKG	N S NONSTOCKED SUITABLE TIMBER LANDS
	03	DBH<5"	03: UNEVEN STRATA - DBH GROUP 0.0' - 4.9'
	08	D:5-10	08: UNEVEN STRATA - DBH GROUP 5.0' - 10.9'
	13	D11-14	13: UNEVEN STRATA - DBH GROUP 11.0' - 14.9'
	18	D15-20	18: UNEVEN STRATA - DBH GROUP 15.0' - 20.9'
	25	D21-28	25: UNEVEN STRATA - DBH GROUP 21.0' - 28.9'
	34	D29-38	34: UNEVEN STRATA - DBH GROUP 29.0' - 38.9'
	45	DBH39+	45: UNEVEN STRATA - DBH GROUP 39.0'+
	EX	EXT-AR	EX: EXISTING SITES OR AREAS
	PT	POT-AR	P T POTENTIAL SITES OR AREAS
		--	----

AGGREGATES FOR LEVEL

9P ALPLNT

9P ALL PLANTATION & SEEDLING STAGES

COMPONENTS

--P1--

--P2--

--1X--

RGN-PL

RGN-TS

9M MATTBR

9M: MATURE TIMBER STRATA AVAILABLE IN PERIOD '1'

--XP--

--3P--

--3G--

--4P--

--4G--

--6G--

9 0 OWLHBT

9 0 ACCEPTABLE TBR STRATA FOR OWL NESTING

--6G--

--4G--

--3G--

D29-38

DBH39+

LEVEL	CODE	NAME	DESCRIPTION
LEVEL 6: -LAND- CLASS *LAND CLASSES - SLOPE & SITE CLASSES*	<3	SLP<30	<3: SLOPES LESS THAN 30-%
	35	31SL50	35: SLOPES BETWEEN 30 - 50-%
	>5	SLP>50	>5 SLOPES GREATER THAN 50-%
	>3	SLP>30	>3: SLOPES GREATER THAN 30-%
	AS	AGGSLP	AS AGGREGATED SLOPE-SITE
	S1	SITE-1	S1: DUNNING SITE CLASS '1'
	S2	SITE-2	S2: DUNNING SITE CLASS '2'
	S3	SITE-3	S3: DUNNING SITE CLASS '3'
	S4	SITE-4	S4: DUNNING SITE CLASS '4'
	S5	SITE-5	S5: DUNNING SITE CLASS '5'
NC	NON-COM	NC: NON-COMMERCIAL OR NON CAPABLE LANDS	
-	-----	-: NOT ONE OF THE ABOVE (NULL)	

AGGREGATES FOR LEVEL

+3 GR-30% +3: SLOPES GREATER THAN 30-%

COMPONENTS

31SL50

SLP>30

SLP>50

SLP<30

AGGSLP

NONCOM

9L SUIT-F

9L SUITABLE FOR LIVESTOCK FORAGE PRODUCTION

Management areas are contiguous capability areas with similar resource characteristics that are used to assign multiple-use prescriptions based on alternative themes. Management areas are delineated based on geopolitical factors (administrative boundaries, issue orientation, historical use patterns, access, landform, vegetation type) and are used to facilitate administration and plan implementation. All management areas are identified as a basic aggregation of capability areas from the resource data base and are delineated on Forest planning display maps shown in the Forest Plan. The TNF has 106 management areas.

C. FORPLAN Prescriptions

A prescription is the set of management practices and the schedule for their application on a specific area to achieve desired objectives. For a given analysis area, the range of prescriptions describes what could be done (i.e., the possibilities) on that analysis area. FORPLAN is used to determine the optimum choice and timing of prescriptions, given the constraints and objective function for an alternative.

Prescriptions were developed by the interdisciplinary team to represent the range of management opportunities and respond to issues. Prescriptions were developed to represent five general conditions or levels of management intensity: minimum level of management, management at greater intensity than current management, and management at the maximum intensity level that is legal and implementable. Prescriptions were formulated to use the most cost-efficient mix of practices to achieve the objectives at each level of management intensity.

Prescriptions were researched to determine the outputs, costs, and benefits that would occur when the prescription is applied to a given analysis area or land unit. This quantification process produced the output, cost, and benefit coefficients that are used in the FORPLAN yield and economic tables.

The Forest distinguishes between FORPLAN prescriptions and management prescriptions (see Section D, Management Prescriptions, which follows). FORPLAN prescriptions are sets of activities which could occur on the analysis area that can be modeled in FORPLAN. They are 'pure' activities in that they are written without imposition of the standards and guidelines needed to fit activities to site-specific conditions.

FORPLAN prescriptions were developed to allow consideration of a full range of management activities on the analysis areas. A minimum level prescription was created for each analysis area to allow a choice between selecting the possible intensive practices or selecting no active management practice. The choice of prescriptions identified for each analysis area was constrained only by technical feasibility. Limiting the number of prescriptions available to choose from in a given analysis process is a type of constraining used to formulate an alternative or benchmark. The FORPLAN prescriptions analyzed are described below. Additional information for the prescriptions and the prescription development process is included in the EIS, Chapter 2 and in the planning records. More detail on characteristics of analysis areas to which each prescription applies is in the planning records (see Identification of Lands Tentatively Capable, Available, and Suitable for Resource Management, Revised July 1985)

Prescriptions have two components, management emphasis and management intensity. These are described below

MANAGEMENT EMPHASIS

CODE	NAME	DESCRIPTION
XX	-NULL-	XX NULL
ML	MLV-	ML GENERAL MINIMUM LEVEL OF MGMT
GA	FOR-A0	GA FOREST-WIDE ACTIVITIES & OUTPUTS ABOVE MINLVL
WP	WLF-PR	WP FOREST-WIDE WILDLIFE-FISHERY PROJECTS
TF	TM-FUL	TF. TIMBER REG CLASS I FULL YIELDS
TS	TSSEL	TS TIMBER REG CLASS II INT UNEVENAGED MGMT TREE SELECTION
GS	GSSEL	GS TIMBER REG CLASS II INT AGED MGMT SELECTION
UI	URBANI	UI TIMBER REG CLASS II URBAN-RURAL INTERFACE RX - STAGGER SW
TR	TM-RED	TR TIMBER REG CLASS II REDUCED YIELDS & SPECIALIZED RX'S
TM	TM-MRG	TM TIMBER REG CLASS III YIELD MARGINAL
SS	SALVGE	SS SANITATION-SALVAGE - OVERLAP RX
TU	TM-UNS	TU TIMBER REG CLASS IV UNSUITABLE - NOT NEEDED
SP	-SPNM-	SP PRIMITIVE OR SEMI-PRIMITIVE WITHOUT ROADS (BACKCOUNTRY)
RN	-RN-	RN ROADED NATURAL
XW	X-WLDN	XW EXISTING WILDERNESS MGMT PROGRAM
NW	+WLDN	XW NEW OR EXPANDED WILDERNESS MGMT
TE	TE-DES	TE DESIGNATION OF AREAS TO THREATENED-ENDANGERED SPECIES
SD	SP-DES	SD DESIGNATION OF AREAS TO SPECIAL CLASSIFICATION E G RNA'S
RR	RECRIV	RR DESIGNATION OF AREAS TO RECREATION RIVER
SR	SCNRIV	SR DESIGNATION OF AREAS TO SCENIC RIVER
WR	WLDRN	WR DESIGNATION OF AREAS TO WILD RIVER
XD	XDVREC	XD EXISTING DEVELOPED RECREATION SITE OR SKIHILL
PD	+DVREC	PD POTENTIAL DEVELOPED RECREATION SITE OR SKIHILL
FC	FP CUR	FC CURRENT LEVEL OF FIRE PROGRAM (FFP)
FS	FP AIR	FS AIR ATTACK EMPHASIS PROGRAM (FFP)
FA	FP ATK	FA INITIAL GR ATTACK AND PREVENTION EM (FFP)
FF	FP FUE	FF FUEL MGMT FIRE PROGRAM (FFP)
MF	FP MLV	MF MINIMUM FIRE PROGRAM (FFP)
CH	CHAPRL	CH CHAPARRAL (BRUSH) MANAGEMENT
TD	TR+DSP	TD NEW TRAIL CONSTRUCTION IN 'RN' AREAS
TW	TR+WLD	TW NEW TRAIL CONSTRUCTION IN WILDERNESS AREAS
TP	TR+SPN	TP NEW TRAIL CONSTRUCTION IN 'SPNM' AREAS
PF	RXFIRE	PF. PRESCRIBED FIRE
26	OWL-26	26 MGMT OF OWL HABITAT BY EVEN-AGED - 2600 ACRES
24	OWL-24	24 MGMT OF OWL HABITAT BY INT-UNEVEN - 2400 ACRES
20	OWL-20	20 MGMT OF OWL HABITAT BY EXT-UNEVEN AGED. 2000 ACRES
16	OWL-16	16 MGMT OF OWL HABITAT BY DEDICATION - 1600 ACRES
TC	TM>RGN	TC TIMBER TO R/ N 3E TYPE CONVEI 3ION
LB	LVSTGB	LB. RANGE MGMT STRATEGY-B. 3OME LIVESTOCK
LC	LVSTGC	LC. RANGE MGMT STRATEGY-C EXTENSIVE LIVESTOCK
LD	LVSTGD	LD. RANGE MGMT STRATEGY INTENSIVE LIVESTOCK
LX	-LVSTG	LX. RANGE MGMT STRATEGY. . REDUCE USE IN FUTURE
--	----	-- NOT ONE OF THE ABOVE (NULL)

AGGREGATES	R LEVEL7	COMPONENTS
9J REG-AC	9J REGULATED TIMBER -ACRES-	TM-FUL TM-RED TM-MRG GSSEL OWL-26 TS-SEL OWL-20 TM>RGN URBANI
90 NO-YLD	90 NO SLWG YIELDS STANDS ARE COVERED BY NATURAL SUCCESSION	TM-UNS OWL-16
9L LIVFOR	9L LIVESTOCK FORAGE PRODUCTION -ALL STRATEGIES	LVSTGB LVSTGC LVSTGD -LVSTG
91 REGCL1	91 REGULATION CLASS #1 - FULL YIELDS	TM-FUL

92 REGCL2	92: REGULATION CLASS #2 - REDUCED-MODIFIED YIELDS	SALVGE TM-RED GSSEL OWL-26 OWL-24 TSSEL URBANI
93 REGCW	93: REGULATION CLASS #3 - MARGINAL-INCIDEMIAL YIELDS	TM-MRG OWL-20
9R REGLTD	9R: REGULATED TIMBER HARVEST	TM-FUL TM-RED TM-MRG GSSEL OWL-26 OWL-24 TSSEL OWL-20 SALVGE TM>RGN URBANI
9E EVENAG	9E: EVENAGED TIMBER M G M	TM-FUL TM-RED OWL-26 URBANI
9I REG1&2	9I: AGG OF REG CLASSES 1 a 2	TM-FUL TM-RED OWL-26 TSSEL URBANI
9M AGG-M1	9M: RXS WITH MODEL 'I' TIMING	TM-UNS OWL-16 TM-MRG OWL-20
9U UNEVEN	9U: UNEVENAGED TBR MGNT EXCEPT FOR GROUP SELECTION	TM-MRG OWL-20 TSSEL
9V ALL-UE	9V: ALL UNEVENAGED TBR M G M	TM-MRG GSSEL OWL-20 TSSEL
9X EA-YLD	9X: YIELDS DERIVED FOR EVENAGED TABLES	TM-FUL TM-RED GSSEL OWL-26 TM>RGN URBANI
90 OWL-MG	90 AGG OF MGNT SCHEMES FOR SPOTTED OWL TERRITORIES	OWL-26 OWL-20 OWL-16 TSSEL
9F ALLFFP	9F: ALL FIRE PRGM EXCEPT MINLVL	FP CUR FP AIR FP ATK
9S ALL-TS	9s: ALL TREE SELECTION TBR M G M	TSSEL OWL-24

CODE	NAME	DESCRIPTION
FW	FOREST	FW GENERAL ADMINISTRATION- FOREST-WIDE A&O
MN	MAINTS	MN MIN LEVEL- STEWARDSHIP- MAINTENANCE (NO DEVELOP)
BR	BR-HAR	BR BURNED PLANATION MORTALITY
SS	SALVGE	SS SANITATION-SALAVAGE OF MATURE EXISTING TBR
SM	ST-MTN	SM STAND MAINTENANCE
GS	GS-HAR	GS GROUP SELECTION (UNITS <5-ACRES)
TS	TSHAR	TS INDIVIDUAL TREE SELECTION-UNEVENAGED MGNT-
CC	CCHAR	CC CLEAR CUT HARVEST
SH	SH-HAR	SH SPECIAL HARVEST #1 NO HERBICIDES AND 3-5AC UNITS
WS	SH-SWD	WS SPECIAL HARV WITH SHWD #1 NO HERBICIDES AND 3-5AC UNITS
XT	SH-THN	XT SPECIAL HARV WITH THIN #1 NO HERBICIDES AND 3-5AC UNITS
SW	SW-HAR	SW SHELTERWOOD HARVEST
2S	SW-OSR	2S SHELTERWOOD HARVEST OVERWOOD REMOVAL
UI	UI-HAR	UI URBAN INTERFACE SPECIAL TBR RX
CT	CT-HAR	CT THINNING FOLLOWED BY CLEAR CUT HARVEST
ST	ST-HAR	ST THINNING FOLLOWED BY SHELTERWOOD HARVEST
GT	GSTHN	GT THINNING FOLLOWED BY SHELTERWOOD HARVEST
OC	OWL-N	OC SPECIALIZED CC & SW RX'S OF SPOTTED OWLS
OD	OWL-OD	OD MGNT OF ODL HABITAT BY DEDICATION-
OT	OWL-TH	OT SPECIALIZED RX'S OF SPOTTED OWLS WITH THIN
OS	OWL-sw	OS STAGGARD SHWD SPOTTED OWL RX'S- LEAVE CLUMPS
OU	OWL-ou	OU SPECIALIZED RX'S OF SPOTTED OWLS BY STAND MAINT (UNEVEN)
OG	OLD-GR	OG 'OLD-GROWTH' MANAGEMENT (UNTREATED)
TC	TYPECV	TC TYPE CONVERT TO TIMBER
RC	PP>>GR	RC TYPE CONVERT TO RANGE
EA	EA-HAR	EA REGEN EVEN-AGED MANAGEMENT- FINAL HARVEST ONLY
ET	ET-HAR	ET REGEN CLEAR-CUT WITH THINNING - ODD YR CYCLES
TE	TE-HAR	TE REGEN CLEAR-CUT WITH THINNING - EVEN YR CYCLES
ES	ESHAR	ES REGEN SHWD EVEN-AGED MANAGEMENT IS 'REQUIRED'
LS	LOWSTD	LS LOW STANDARD MGNT OF REC. AREAS
SD	FULSTD	SD FULL STANDARD MGNT OF REC AREAS
RH	REHABT	RH REHABT OF RECREATION SITES-AREAS FROM LOW TO FULL
NC	NCONST	NC NEW CONSTRUCTION OF SITES
-4	-40 \$\$	40% REDUCTION IN FIRE PROGRAM BUDGET
-2	-20 \$\$	20% REDUCTION IN FIRE PROGRAM BUDGE
CR	CUR \$\$	CURRENT BUDGET FOR FIRE PROGRAMS
+2	+20 \$\$	20% INCREASE IN FIRE PROGRAM BUDGET
+4	+40 \$\$	40% INCREASE IN FIRE PROGRAM BUDGET
MF	FML \$\$	MF MINIMUM LEVEL FIRE PROGRAM BUDGET
BA	BOTONY	BA BOTANICAL SPEC AREA MGNT
XW	X-WLDN	XW EXISTING S MGMT PROGRAM
RR	RECRIV	RR DESIGNATION OF AREAS TO RECREATION RIVER
SR	SCNRIV	SR DESIGNATION OF AREAS TO SCENIC RIVER
WR	WLD RIV	WR DESIGNATION OF AREAS TO WILD RIVER
RN	R-N-A-	RN RESEARCH NATURAL AREA SPECIAL MGT
CA	NA-CUL	CA NATIVE AM LTUFAL AREA
RW	VOL-RW	RW VOLUME OF WAY TIMBER VOLUME - REGUL RX'S
XX	XX-CAP	XX EXCESSIVE CAPACITY
FC	FACTLY	FC FACILITIES MANAGEMENT
-		- NOT ONE OF THE ABOVE (NU)

AGGREGATES FOR LEVEL 8

1 ALL THN 9T ALL REGUL HARVEST FROM THINNING

COMPONENTS

CT-HAR
ST-HAR
ET-HAR
TE-HAR
OWL-TH
SALVGE
SH-THN
GSTHN
CCHAR
SW-HAR
EA-HAR
OWL-EV

9F ALFHAR 9F ALL REGUL HARVEST FROM FINAL HARVEST

9A ALLHAR

9A ALL REGUL HARVEST

ESHAR
 TYPECV
 GSHAR
 OWL-sw
PP>>GR
 TSHAR
 SH-SWD
 VOL-RW
 SH-HAR
 SW-OSR
 CCHAR
 SW-HAR
 EA-HAR
 CT-HAR
 ST-HAR
 ET-HAR
 ES-HAR
 OWL-EV
 OWL-sw
 OWL-TH
 TS-HAR
 VOL-RW
 SH-HAR
 SH-THN
 SH-SWD
 GS-THN
 SW-OSR
 SH-HAR
 SH-SWD
 SH-THN
-40 \$\$
-20 \$\$
 CUR \$\$
+20 \$\$
+40 \$\$
 FML \$\$
 GSHAR
 OWL-ou
 TS-HAR
 ST-MTN

 OWL-TH
 OWL-ou
 OWL-sw
 OWL-OD
 OWL-EV
 TSHAR

9B BECKWT

9B ALL NO HERBICIDERX'S

9\$ A\$FIRE

9\$ ALL BUDGET LEVELS IN FFP

9U ALL-UE

9U ALL UNEVEN-AGED MGNT REGIMES

9S ALLOWL

9S ALL SUITABLE HABITAT WITH IN 'OWL TERRITORY'

D. Management Prescriptions

Management direction for the TNF is described by 15 different management prescriptions representing 15 different bundles of management practices and the standards and guidelines (See EIS, Chapter 2, Section E, Management Prescriptions and Management Areas, and Table 2 16) Each management prescription is modeled in FORPLAN by different proportions of the FORPLAN prescriptions (emphasis/intensity combinations). The 15 management prescriptions and corresponding FORPLAN prescriptions are described as follows

#	Management Prescription	FORPLAN Prescriptions
1	The theme is to manage the designated Granite Chief area as wilderness Manage for dispersed recreation Manage grazing under extensive use. This land is unsuited for timber production	X-WLDN/X-WLDN
2.	The theme is to retain a near-natural appearing forest environment while also producing some forage and water Manage for dispersed nonmotorized recreation Grazing is permitted Low standard roads may be developed for harvesting but are closed to public vehicle use Land is unsuited for regulated timber production	NOTCAP/NOTC, TM-UNS/MINLVL RGEMGT/MAINTA
3	The theme is to produce a moderate level of commodities while enhancing or emphasizing other selected resources. Manage for dispersed motorized recreation	NOTCAP/NOTCAP TM-MRG/GR-SEL RGEMGT/MAINTA
4.	The theme is to provide water-oriented recreational opportunities Manage for developed recreation use around reservoirs and lakes. Maintain and upgrade developed facilities Maintain visual quality background for the recreation users. Allow vegetative management, including regulated timber harvest, only when compatible with recreation and visual objectives and maintenance of stand vigor. Provide interpretive services and facilities where appropriate (1/ FORPLAN will identify the most economically efficient intensity from those available See the proceeding Section C, FORPLAN Prescriptions)	NOTCAP/NOTCAP TM-UNS/MINLV TM-MRG/GR-SEL TM-RED/(INTENSITY) 1/ RGEMGT/MAINT
5	The theme is to establish representative vegetation and geologic areas for scientific and educational research Manage for research and special interest purposes. Other uses permmed when not in conflict with research objectives Timber harvest would be unregulated.	NOTCAP/NOTCAP TM-UNS/MINLVL RGEMGT/MAINTA
6	The theme is to manage as a classified wild river, in accordance with the North Fork American Wild River Management Plan and as stated in Section 10(a) of the Wild and Scenic River Act of 1968 The fisheries will be managed as stated in the Cooperative Habitat Management Plan for the river These lands are unavailable for forage and timber production and have been withdrawn from mineral appropriation since 1975.	UNAVAL/UNAVAL

- | | |
|--|--|
| <p>7. The theme is to improve fish and wildlife harvest species habitat while producing other commodities. Allow grazing if not conflicting with wildlife Restrict transportation use to meet wildlife objectives Harvest timber on a regulated basis</p> | <p>NOTCAP/NOTCAP
 TM-UNS/MINLVL
 TM-MRG/GR-SEL
 TM-RED/(INTENSITY)
 TM-FUL/(INTENSITY)
 RGEMGT/MAINTA</p> |
| <p>8 The theme is to retain a natural appearing forest environment while also producing some timber, forage, and water. Manage for visual attractiveness as viewed from major travel routes Allow uses compatible with adopted visual quality objectives. Provide interpretive services and facilities where appropriate Allow regulated timber harvest.</p> | <p>NOTCAP/NOTCAP
 TM-UNV/MINLVL
 TM-MRG/GR-SEL
 TM-RED/(INTENSITY)
 TM-FUL/(INTENSITY)
 RGEMGT/MAINTA</p> |
| <p>9. The theme is to maintain watershed integrity. Manage for watershed protection and improvement. Allow other resource uses when compatible with water quality objectives. Provide no new developed recreation facilities Stabilize those roads which contribute to the watershed degradation. Restrict off-road vehicle uses Allow regulated timber harvest</p> | <p>NOTCAP/NOTCAP
 TM-UNS/MINLVL
 TM-MRG/GR-SEL
 TM-RED/(INTENSITY)
 RGEMGT/MAINTA</p> |
| <p>10. The theme is to maintain land and resource values necessary to retain a high value for exchange The land is unsuited for regulated timber production.</p> | <p>NOTCAP/NOTCAP
 TM-UNS/MINLVL
 RGEMGT/MAINTA</p> |
| <p>11. The theme is to provide winter recreation opportunities Manage for Nordic and alpine ski potential with other compatible uses. Timber harvest would be unregulated on most areas</p> | <p>NOTCAP/NOTCAP
 TM-UNS/MINLVL
 RGEMGT/MAINTA</p> |
| <p>12. The theme is to emphasize land uses for facilities such as pipelines, transmission lines, and administrative sites. Manage for primary use as allowed under special-use permit and administrative uses. Other compatible uses allowed Timber harvest would be unregulated.</p> | <p>NOTCAP/NOTCAP
 TM-UNS/MINLVL
 RGEMGT/MAINTA</p> |
| <p>13. The theme is to intensively manage timber and forage resources. Emphasize regulated timber production utilizing even-age or uneven-age silvicultural system on available, capable, and suitable lands. Grazing would be managed under both intensive and extensive systems.</p> | <p>NOTCAP/NOTCAP
 TM-UNS/MINLVL
 TM-MRG/GR-SEL
 TM-RED/(INTENSITY)
 TM-FUL/(INTENSITY)
 RGEMGT/MAINTA
 RGEMGT/CONVER</p> |
| <p>14. The theme is to provide areas for cooperative studies emphasizing wildlife and timber resource management relationships Manage for fish and wildlife cooperative research and a regulated flow of timber products. Maintain the existing water quality and flow needs for aquatic ecosystem research.</p> | <p>NOTCAP/NOTCAP
 TM-UNS/MINLVL
 TM-MRG/GR-SEL
 TM-RED/(INTENSITY)
 TM-FUL/(INTENSITY)
 RGEMGT/MAINTA</p> |

- 15 The theme is to manage for a predominantly natural appearing landscape and late successional wildlife habitat, using a full range of timber management practices

NOTCAP/NOTCAP
TM-UNS/MINLVL
TM-RED/(INTENSITY)
TM-FUL/(INTENSITY)
RGEMGT/MAINTA

FORPLAN recreation prescriptions apply to existing and potential developed recreation sites and downhill ski areas. These prescriptions are assigned based on economics or the theme of each alternative. They are compatible with the themes of management prescriptions 2, 3, 4, 8, 11, 12, 13, and 15.

FORPLAN wildlife, facilities, and fire prescriptions are associated with 'dummy' analysis areas. FORPLAN allocates the prescriptions based on economics or as constrained by the theme of each alternative. Site-specific allocation of these prescriptions would be made at the project level to meet the objectives of the management prescriptions.

E. Time Periods

To assure that the allowable sale quantity can be achieved and maintained, a 16-decade planning horizon is **used** in FORPLAN. The first decade of the planning horizon is the period 1989-1998. A total of 16 time periods, each with a duration of 10 years, is used in the modeling process. However, in order to reduce the complexity of data displayed in the EIS, 5 decades are **used** in all EIS display tables.

F. Outputs

Table B 2 displays the output environmental effects used to analyze the alternatives

TABLE B.2 - OUTPUTS AND ENVIRONMENTAL EFFECTS

OUT-PUT CODE	OUTPUT/ENVIRON EFFECT	UNIT OF MEASURE	JNITS IN \$	PER AREA PER ACRE	PER PERIOD PER YEAR	RETURN TO FEDERAL GOVERN	OTHER RETURN
ACT	AC-T TIMING - PERIODIC	ACT	NO	ACRE	PERIOD	NO	NO
ACA	AC-A TRACKING ALLOCATE	ACA	NO	ACRE	PERIOD	NO	NO
ACI	AC-I TRACKING IMPLEMENT	AC-I	NO	ACRE	PERIOD	NO	NO
SWLG	SWLG SOFTWOOD SAWTIMBER	C-CF	NO	ACRE	PERIOD	YES	NO
MMBF	MMBF SOFTWOOD SAWTIMBER	MMBF	NO	ACRE	PERIOD	NO	NO
CORD	CORD FUELWOOD-BIOMASS	CORD	NO	ACRE	PERIOD	YES	NO
LTSY	LTSY LONG TERM SY	C-CF	NO	ACRE	YEAR	NO	NO
INVN	INVN.TIMBER INVENTORY	C-CF	NO	ACRE	YEAR	NO	NO
GROW	GROW TIMBER GROWTH	C-CF	NO	ACRE	YEAR	NO	NO
ROT5	ROT5 ROTATION 50 YRS	-ACRE	NO	ACRE	PERIOD	NO	NO
ROT6	ROT6 ROTATION 60 YRS	-ACRE	NO	ACRE	PERIOD	NO	NO
ROT7	ROT7 ROTATION 70 YRS	ACRE	NO	ACRE	PERIOD	NO	NO
ROT8	ROT8 ROTATION 80 YRS	ACRE	NO	ACRE	PERIOD	NO	NO
ROT9	ROT9 ROTATION 90 YRS	-ACRE	NO	ACRE	PERIOD	NO	NO
+PLN	+PLN ACCUML PLANTAT	-ACRE	NO	ACRE	PERIOD	NO	NO
OWLF	OWLF OWL HAB-FEEDING	ACRE	NO	ACRE	PERIOD	NO	NO
OWLN	OWLN OWL HAB-NESTING	ACRE	NO	ACRE	PERIOD	NO	NO
OWLR	OWLR OWL HAB-REPLACE	ACRE	NO	ACRE	PERIOD	NO	NO
XOWL	XOWL OWL HAB NOT NETWK	ACRE	NO	ACRE	PERIOD	NO	NO
H-SX	H-SX BRUSH, GRASS	-ACRE	NO	ACRE	PERIOD	NO	NO
H-OO	H-OO BARREN, WATER	-ACRE	NO	ACRE	PERIOD	NO	NO
H-HD	H-HD PURE HARDWOODTYPE	-ACRE	NO	ACRE	PERIOD	NO	NO
H-X3	H-X3 MX HDWD-CONIF TYP	-ACRE	NO	ACRE	PERIOD	NO	NO
H-1X	H-1X SEEDS-SAPLING TYPE	-ACRE	NO	ACRE	PERIOD	NO	NO
H-2X	H-2X POLES HAB TYPE	-ACRE	NO	ACRE	PERIOD	NO	NO
H-3A	H-3A SM SWTBR <40% CRWN	ACRE	NO	ACRE	PERIOD	NO	NO
H3C	H-3C SM SWTBR >40% CRWN	-ACRE	NO	ACRE	PERIOD	NO	NO
H-4A	H-4A LG SWTBR <40% CRWN	-ACRE	NO	ACRE	PERIOD	NO	NO
H-4C	H-4C LG SWTBR >40% CRWN	-ACRE	NO	ACRE	PERIOD	NO	NO
DBH1	DBH1 DBH CLASS <11"	-IMPUTED AC	NO	ACRE	PERIOD	NO	NO
DBH2	DBH2 DBH CLASS 11"-14"	-IMPUTED AC	NO	ACRE	PERIOD	NO	NO
DBH3	DBH3 DBH CLASS 15'-20'	-IMPUTED AC	NO	ACRE	PERIOD	NO	NO
DBH4	DBH3 DBH CLASS 21"-28"	-IMPUTED AC	NO	ACRE	PERIOD	NO	NO
DBH5	DBH3 DBH CLASS 29-38'	-IMPUTED AC	NO	ACRE	PERIOD	NO	NO
DBH6	DBH3 DBH CLASS 39+ "	-IMPUTED AC	NO	ACRE	PERIOD	NO	NO
SNAG	SNAG SNAGS	-ACRE	NO	ACRE	PERIOD	NO	NO
WW1A	WW1A DISP REC RVDCAP	-MRVDS	NO	ACRE	PERIOD	NO	YES
WW1B	W W1 B WILDNS REC WDCAP	-MRVDS	NO	ACRE	PERIOD	NO	YES
WW2A	W W2 A WILDNS REC CAP NON-SKI	-MRVDS	NO	ACRE	PERIOD	NO	YES
W 3 A	W 3 A SKIING F RVDCAP	-MRVDS	NO	ACRE	PERIOD	NO	YES
WC1C	W C1 C WILDLIFE USE	-MWFUD	NO	ACRE	PERIOD	NO	YES
EFAL	EFAL EFFECTIVE ALTEF	-ACRES	NO	ACRE	PERIOD	NO	NO
DISP	DISP DISPERSION-OPENING	-ACRES	NO	ACRE	PERIOD	NO	NO
OEFL	OEFL CARRYOVER EFF ALTR	-ACRES	NO	ACRE	PERIOD	NO	NO
ODSP	ODSP CARRYOVER DISPERS	-ACRES	NO	ACRE	PERIOD	NO	NO
W67D	W67D GRAZING CAP INVEST	-AUMS	NO	ACRE	PERIOD	NO	YES
X80W	X80W WATER YI	-MACRE FT	NO	ACRE	PERIOD	NO	YES
SEDM	SEDM SEDIMENT YIELD	-TONS	NO	ACRE	PERIOD	NO	NO
ERA1	ERA1 HYDROLOGY RA	-AC-EQV	NO	ACRE	PERIOD	NO	NO
ERA2	ERA2 BOTTOM LINE ERA*	-AC-EQV	NO	ACRE	PERIOD	NO	NO
ERA3	ERA3 ZAN ECIAL *ERA*	-AC-EQV	NO	ACRE	PERIOD	NO	NO

OUTPUT AGGREGATES

CODE	NAME	NAME	UNITS	FACTOR
9DSP	9DSP AGG NFMA DISPERSION	DISP DISPERSION-OPENING ODSP CARRYOVER DISPERS	-ACRES ACRES	1 000 1 000
9EFL	9EFL AGG EFFECTIVE ALTR 0EFL CARRYOVER EI ALTR	EFAL EFFECTIVE ALTER ACRES	-ACRES 1 000	1 000
9DBH	9DBH ALL DBH GROUPS	DBH1 DBH CLASS <11" DBH2 DBH CLASS 11"-14" DBH3 DBH CLASS 15"-20" DBH3 DBH CLASS 21"-28" DBH3 DBH CLASS 29"-38" DBH3 DBH CLASS 39"+	-IMPUTED AC -IMPUTED AC -IMPUTED AC -IMPUTED AC -IMPUTED AC -IMPUTED AC	1 000 1 000 1 000 1 000 1 000 1 000
9DSR	9DSR ALL DISPERED RVD'S	WW1A DISP REC RVDCAP WC1C WILDLIFE USE WW1B WILDNS REC RVDCAP	-MRVDS -MWFUD -MRVDS	1 000 1 000 1 000
9DEV	9DEV ALL DEVELOPD RVDS	WW2A DEV REC CAP NON-SKI WW3A SKIING REC RVDCAP	-MRVDS -MRVDS	1 000 1 000
9RVD	9RVD ALL FS RECREATION RVDS	WW1A DISP REC RVD-CAP WC1C WILDLIFE USE WW1B WILDNS REC RVD-CAP WW2A DEV REC CAP NON-SKI V A SKIING REC RVD IF	-MRVDS -MWFUD -MRVDS -MRVDS -MRVDS	1 000 1 000 1 000 1 000 1 000
9OWS	9OWS SUITABLE OWL HABIT	OWLF OWL HABITAT-FEEDING OWLN OWL HABITAT-NESTING	-ACRE -ACRE	1 000 1 000
9OWT	9OWT ALL OWL HABITAT	OWLR OWL HABITAT-REPLACE OWLF OWL HABITAT-FEEDING OWLN OWL HABITAT-NESTING	-ACRE -ACRE -ACRE	1 000 1 000 1 000
9OWL	9OWL ALL OWL HABITAT	OWLR OWL HABITAT-REPLACE OWLF OWL HABITAT-FEEDING XOWL OWL HABIT NOT NETWK OWLN OWL AT-NESTING	-ACRE -ACRE -ACRE ACRE	1 000 1 000 1 000 1 000

Outputs are estimated using yield coefficients. For outputs modeled in FORPLAN these coefficients are built into the yield tables and are used to estimate outputs for all prescription/analysis area combinations. For outputs accounted for outside FORPLAN, yield coefficients are applied to factors that are accounted for both inside and outside the FORPLAN model. The process used by the interdisciplinary team to develop the yield coefficients for each output is summarized below. A detailed discussion of yield coefficients follows the summary.

G Coefficient Documentation

OUTPUT	SUMMARY OF PROCESS FOR ESTIMATING COEFFICIENTS
	INSIDE FORPIAN
Timber	Timber yield coefficients were developed from a Forest inventory completed in 1980 using a computer program called RAMPREP. This program predicts yields over time for each timber strata based on volume, age, and growth rate
Timber Suitable Lands	These acres are capable and suitable for timber production. See TNF's Identification of Lands Tentatively Capable, Available, and Suitable for Resource Management (7/85) and Appendix K for more information

Long-Term Sustained Yield	This is the potential long-term sustained yield capacity that is theoretically possible, based on the prescriptions allocated. Optimum capacities were predicted by FORPLAN, based on timber yield tables, and are expressed in cubic feet.
Ending Inventory of Timber	This is the merchantable volume of all the standing timber that would exist at the end of the planning period. Coefficients for predicting growth and yields are in FORPLAN and are expressed in cubic feet.
Range	These coefficients measure the potential usable AUM's (Animal Unit Months) per acre per decade for permanent and transitory range. Coefficients were also estimated for increased usable AUM's resulting from various timber management activities, prescribed burns, and type conversions. The Forest Range Conservationist developed the yield coefficients, based on vegetative types, slope, manageable range allotments, and historical use.
Recreation, Dispersed	Dispersed recreation capacity was based on the level of dispersed development, use densities for various ROS (Recreation Opportunity Spectrum) class areas of the Forest, and historical use.
Recreation, Developed	Developed recreation capacity was based on types of existing and potential developed sites and their PAOT (person-at-one-time) capacities, using data from Recreation Information Management (RIM).
Recreation, Downhill Skiing	Alpine ski area capacity was based on existing capacities, predicted potential development capacities, and historical use.
Recreation, Wilderness	Inventoried roadless area capacities were based on their predicted use densities for the ROS classes within their boundaries, and historical wilderness-compatible use. Following signing of the California Wilderness Bill on September 28, 1984, these yield coefficients were used for dispersed recreation capacity.
Wildlife and Fish User Days	WFUD's are a result of habitat improvement, resource management activities, and uninduced use based on total dispersed recreation use. Yields for various activities were based on historical use. Because WFUDs are part of the total dispersed recreation output, they contribute to the dispersed demand cutoff.
	Based on the current situation, 8 percent of the Forest's dispersed recreation is considered Wildlife and Fish User Days. Forty-five percent of this use is a background level, associated with minlevel. The other 55 percent is met by a link to timber suitable acres and fish and wildlife improvements projects (see Wildlife Improvements). Recreation Visitor Days and Wildlife and Fish User Days are the same unit of measure, and therefore are additive. Timber induced WFUDs are nonstructure habitat improvements resulting from regeneration cutting. WFUD's are also generated by structural habitat improvements projects such as guzzlers. Costs and benefits attributed to structural habitat projects are based on the local experience of the Forest Wildlife Biologist.
	The paper by Gerstung (1973) formed the basis for calculating fish production in streams. The potential maximum yield for various stream widths was the starting point. It was assumed that these values were for good quality streams. The biologist also assumed a relationship between stream quality and habitat improvement potential, i.e., streams with good quality have a low overall habitat improvement potential.

A similar method was used to calculate fish production in lakes, except that the basis for all calculations came from conversations with the Fisheries Biologist on the Eldorado NF. His work on the Eldorado NF was assumed to be applicable to the TNF. The assumption (based on his work) was that lakes having good quality would produce approximately five pounds of fish per acre per year.

The total potential increase in stream and lake production made up the maximum production that could be expected on the Forest. Finally, specific portions of the maximum production were partitioned among the alternatives. The amount of production occurring in each alternative was dependent on the theme and the amount of fisheries habitat improvement allocated to each particular alternative.

Wildlife Habitat Types

Based on the Wildlife and Fish Habitat Relationship model (WFHR), relationships were developed between the existing and future vegetation and 10 wildlife habitat types. The TNF habitat types are: Seedlings and saplings (1X); Poles (2X); Small sawtimber, <40 % crown closure (3A); Small sawtimber, >40% crown closure (3BC), Medium-Large sawtimber, <40% crown closure (4A); Medium-Large sawtimber, >40% crown closure (4BC); Hardwood/conifer mix (3X), Pure hardwoods (HD); Brush and grass (SX); and miscellaneous (00).

Spotted Owl Habitat

The habitat suitable for spotted owls was linked to the mix of vegetation that results from natural succession or forest management. Mixed conifer and red fir stands with over 70 percent crown closure that were at least 150 years old were considered suitable habitat; stands that do not meet both criteria were considered unsuitable. Each SOHA was constrained to Sustain at least 1,000 acres of suitable habitat over time.

Water Yields

The Forest Hydrologist developed coefficients to show increases in water runoff due to planned management prescriptions or fire. Coefficients for various timber management activities, prescribed burns, and type conversions were used in FORPLAN to predict yields. The water runoff coefficients varied by vegetation and elevation. Yields were predicted, based on coefficients from literature review and existing yield records.

Water yield coefficients for various broad strata were estimated based partly on water yield coefficients in a number of publications, partly on professional judgement, and by adjusting these values to agree with the total net yield derived from existing runoff records. Water yield increase coefficients were obtained from the literature including (1) EPA Publication EPA-600/8-/80-012, titled 'An Approach to Water Resources Evaluation of Non-Point Silvicultural Sources (A Procedural Handbook),' (2) USFS Publication 'The Impact of Timber Harvest on Soils and Water,' reprinted from the Report of the President's Advisory Committee on Timber and the Environment, April 1973, and (3) USFS Publication 'Water Yield Opportunities on National Forest Lands in Arizona,' by Rhey M. Solomon and Larry J. Schmidt.

A 20-year hydrologic recovery period is assumed. National Forest System lands' yield is 61.7 percent of usable reservoir capacity, or 919,000 acre-feet per year. This is 46 percent of the total water currently produced on NFS lands.

Roads

The arterial, collector, and local roads needed to access land for timber, range, and recreation for each decade were calculated for the general Forest area and for each roadless area separately. All yield coefficients were based on existing and predicted road densities.

Wildfire Loss

Burned acres, costs, and net value change for each fire program/option were based on outputs from the Initial Attack Assessment Model, version 2. These outputs and values were integrated into FORPIAN and became active outputs in the allocation and scheduling decisions. Coefficients selected were.

1) FFF Cost plus Net Value Change (NVC) excluding plantations, acres burned by wildfire within a) mature timber, brush, and grass vegetation types and b) plantations. Both cost, NVC, and acres burned are specific by fire program option by decade.

2) NFDRS Fuel Model associated with timber strata at present distribution and change over time. Fire Program Options. Three fire program options were developed:

a) Current Option (CUR): This program is the base fire management program and its configuration is similar to the FY 1982 Forest Fire Management Program. The emphasis is a combination of large (Model 51/60) and small (Model 40) fire engines with fuels (115) project dollars.

b) Attack/Prevention Option (AKP): This program switches emphasis from the current option (a mix of large and small engines) to all small engines. This concept will allow a greater flexibility to provide increased prevention efforts.

c) Air Attack Option (AIR): This program replaces a number of small engines from the Attack/Prevent Option with one or two medium-size (Hughes 500D) helicopters. This emphasis will provide quicker response times to some fires by initial attack forces.

Fire Program Mixes (FFP budget level). For each fire program option, five different FFP budget levels were derived from the FY 1982 budget level. In addition, a minimum budget level was estimated, displaying costs of a reduced organization (detection and initial attack only).

FFF Cost/Acre of a Plantation Fire. This is calculated from a weighted average of all fire program option FFF costs on a per-acre basis. The figure to be used is \$850/acre.

Probability Factor of Burning an Acre of Plantation (By Decade). This calculates the probability of burning an acre of plantation given the Forestwide plantation acreage.

Fuels Treatment

Based on the allocated and scheduled activities, fuel treatments over time were predicted. The categories reported were total treated acres, broadcast-burned acres, and piles burned (acres)

Fuel Model Groups

Based on the allocated and scheduled lands, acres by fuel model groups were predicted. Relationships between vegetation, seral stages, and FORPIAN prescriptions were developed as the inputs for these yields.

Effective Alteration

This output is expressed in acres effectively altered by vegetation changes. Coefficients were developed to indicate the visual impact of timber harvests and other vegetation changes. The EFFALT model is discussed in more detail in Section IV D of this appendix

OUTSIDE FORPIAN

Non-chargeable Harvest	Harvest volume per acre is based upon the average unregulated harvest for the period 1979-83, divided by the acres of unregulated as stated in the 1978 Timber Management Plan.
Fuelwood	Fuelwood yields were derived from historical data for cull material, unutilized material up to 3 inches in diameter, precommercial thinning slash, and hardwood volumes associated with timber sales. The average volume per acre available was reduced by slope classes because of access problems. On steeper slopes, only the average fuelwood volume within 50 feet of the downhill side of the road and 200 feet of the uphill side were considered available. Background data used to derive the coefficients are in the TNF planning records.
Biomass	Biomass yields were developed from timber inventory values by stratum, including the merchantable bole, tops, limbs, cull material, hardwoods, non-commercial conifers, and precommercial thinning residues. Accessibility did not enter into the calculation. Background data used to derive the coefficients are in the TNF planning records.
Visual Quality Index	Levels of visual resource outputs for each of the alternatives have been compared by applying a numerical weight to the quantity (in acres) of each Visual Quality Objective by variety class. A higher weight is given to VQOs maintaining natural qualities and higher scenic quality. A single index was developed for each alternative. The procedure is found in Forest Service Manual 2383.4 , Regional Supplement #143, 5/83 . The index for each alternative was determined from the allocated management prescriptions and their acres of VQO's by variety class. The index for the current situation is based upon review of the actual visual condition of the landscape by variety class.
Recreation Opportunity Spectrum (ROS)	Acres of ROS class over time were based on the existing physical setting, scheduled recreation development, timber harvesting, and road construction. The USDA Forest Service 'ROS User's Guide' and Forest Service Manual 2331.47 and 2353.4, R-5 Supplement #122 10/80 , were used as reference.
Watershed Improvement	There were no coefficients for this output. Acres were estimated, based on alternative theme and existing situations' potential for improvement projects.
Trails	Trail miles were calculated based on current trail system, lands allocated to nonroaded areas, and the total dispersed RVDs.
OHV	There were no coefficients for this output. Based on the total number of dispersed RVDs miles of road and trail, and the alternative theme, the ID Team developed the outputs for miles of open, closed, and seasonal OHV roads and trails.
Minerals	There were no coefficients for this output. Outputs were estimated, based on historical operating plans and available lands.

H Economics in FORPLAN

Economics is discussed in the EIS, Chapter 2, Section F, Economic Effects, and Section B, the Alternative Development Process, and displayed in various tables; in Chapter 4, Section B, The Economic Consequences Appendix D outlines how economics are used in the entire document. Demand analysis is presented in The Affected Environment, Chapter 3. Most of the economic efficiency

analysis was conducted with the use of the FORPLAN model. Economic data and assumptions incorporated into the FORPLAN/ are described below.

DISCOUNT RATE

An interest rate of 4.0 percent was used to determine the present value of future benefits and costs. This rate approximates the long-term cost of capital in the private sector as measured by the return on AAA corporate bonds after adjustment for inflation. (See Row, Clark; H. Fred Kaiser, and John Sessions, 'Discount Rate for Long-Term Forest Service Investments: Journal of *Forestry*, June 1981, for a complete discussion of the rationale for the discount rate.)

BASE YEAR FOR DOLLAR VALUES

(All dollar values are expressed in 1982 dollars. The following factors based on the implicit price deflator for gross national product were used to adjust values from other years to 1982.)

Year	Factor
1978-82	1.39
1979-82	1.28
1980-82	1.18
1981-82	1.08

REAL COST AND PRICE TRENDS

The real cost and price trends used for timber are shown below:

	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
Timber price increase, average annual percent	4.78	1.09	2.06	1.57	1.84
Timber cost increase, average annual percent	3.10	2.40	1.90	1.60	1.60

These timber price trends are projections from an econometric model of National and Regional timber markets (Haynes, Richard W., Kent P. Connaughton, and Darius M. Adams; 'Stumpage Price Projections for Selected Western Species', USDA Forest Service Research Note PNW-367, November 1980.) The timber cost trends are based on projections of per capita disposable personal income because timber management cost increases have historically been highly correlated with increases in per capita disposable income. (USDA Forest Service, An assessment of the Forest and Range Land Situation in the United States, January 1980.) Cost and prices for all other resources were held constant.

Benefits

The dollar values for outputs used to calculate PNV are the prices that consumers would be willing to pay for forest outputs, whether or not such prices are actually collected by the Federal Government. At present it is National policy to provide most forest outputs either at no charge to consumers or at a charge less than the willingness to pay price. This is shown in the following tabulations in Table B.3. All benefits which can be assigned a significant monetary value are accounted for by the model. Nonpriced benefits are accounted for outside the model in the evaluation of net public benefits.

TABLE B.3 - BENEFITS USED IN FORPLAN ANALYSIS-1982 Dollars

OUTPUT	UNIT	AVERAGEACTUALCASH RECEIPTS PER UNIT OF OUTPUT	AVERAGE WILLINGNESS TO PAY VALUE USED IN THIS ANALYSIS
TIMBER			
Existing Timber Final Harvest (Regeneration)			
0-30 percent slope	MCF	1283	1283
30-50 percent slope	MCF	1151	1151
50 percent plus slope	MCF	883	883
Intermediate Harvest (Thinning)			
0-30 percent slope	MCF	1191	1191
30-50 percent slope	MCF	1033	1033
50 percent plus slope	MCF	711	711
Selection Harvest			
All logging	MCF	466	466
Aerial logging	MCF	-426	-426
Regenerated Timber Final Harvest			
0-30 percent slope			
Diameter class 12	MCF	761	761
Diameter class 14	MCF	900	900
Diameter class 16	MCF	1022	1022
Diameter class 18	MCF	1109	1109
Diameter class 20	MCF	1161	1161
Diameter class 22	MCF	1283	1283
30 to 50 percent slope			
Diameter class 12	MCF	629	629
Diameter class 14	MCF	768	768
Diameter class 16	MCF	890	890
Diameter class 18	MCF	977	977
Diameter class 20	MCF	1029	1029
Diameter class 22	MCF	1151	1151
50 percent plus slope			
Diameter class 12	MCF	361	361
Diameter class 14	MCF	500	500
Diameter class 16	MCF	622	622
Diameter class 18	MCF	709	709
Diameter class 20	MCF	761	761
Diameter class 22	MCF	883	883
Intermediate Harvest (Thinning)			
0-30 percent slope			
Diameter class 12	MCF	669	669
Diameter class 14	MCF	880	880
Diameter class 16	MCF	930	930
Diameter class 18	MCF	1017	1017
Diameter class 20	MCF	1069	1069
Diameter class 22	MCF	1191	1191
30-50 percent slope			
Diameter class 12	MCF	511	511
Diameter class 14	MCF	650	650
Diameter class 16	MCF	772	772
Diameter class 16	MCF	859	859
Diameter class 20	MCF	911	911
Diameter class 22	MCF	1033	1033

TABLE B.3 - BENEFITS USED IN FORPLAN ANALYSIS-1982 Dollars (Continued)

OUTPUT	UNIT	AVERAGE ACTUAL CASH RECEIPTS PER UNIT OF OUTPUT	AVERAGE WILLINGNESS TO PAY VALUE USED IN M I S ANALYSIS
TIMBER (Continued)			
50 percent plus slope			
Diameter class 12	MCF	189	189
Diameter class 14	MCF	328	328
Diameter class 16	MCF	450	450
Diameter class 18	MCF	537	537
Diameter class 20	MCF	589	589
Diameter class 22	MCF	711	711
RANGE			
Livestock grazing	AUM	1 86	14 71
RECREATION			
Dispersed, standard	RVD	0 3	11 30
Dispersed, low standard	RVD	0	5 99
Developed, ski	RVD	0 53	11 20
Developed, standard	RVD	0 25	11 20
Developed, low standard	RVD	0	5 94
Wilderness, standard	RVD	0	13 75
Wilderness, low standard	RVD	0	7 29
WILDLIFE AND FISH			
Resident fish use	WFUD	0	12
Other game use	WFUD	0	18
Big game use	WFUD	0	30
Nongame use	WFUD	0	25
Recreation use-other elements	WFUD	0	18
WATER	Ac Ft	0	59

Output above the estimated demand was not valued. A calculator with a built-in discounting routine was used to incorporate benefits valued outside of FORPLAN in the PNV analysis.

For outputs used off-site, benefits are based on the value of the outputs as they leave the land or production site. For outputs used on-site, benefits are valued when use takes place. However, in cases where it is easier to derive values after the output leaves the production site, costs incurred and profits earned after the output leaves the site were deducted from the values at later production stages.

Timber values are average stumpage prices developed from Forest sale records for the period 1979-1982.

Grazing values are the average amount that Tahoe National Forest permittees are willing to pay for grazing on the Forest as estimated from ranch livestock budgets developed by the USDA Economic Research Service.

Recreation and wildlife and fish user day values are the estimated average amount that recreationists are willing to pay at the site. These values are based on a National survey of travel cost and contingent value recreation studies conducted by the Forest Service for the 1985 Resource Planning Act (RPA) evaluation (Draft Environmental Impact Statement 1985-2030 Resources Planning Act Program, Appendix F, Forest Service, U.S. Department of Agriculture, 1/84).

Water values are based on the marginal value of water in irrigation use (the primary water used in California) determined from studies surveyed by the Forest Service for the 1985 RPA. (ibid.)

Only potentially usable water is valued; but all water, whether used or not, is tracked. Of the approximately 2,000,000 acre-feet of water yielded annually on the TNF, only 919,000 acre-feet are usable. A value of

\$59 was assigned to the usable water; a value of zero is assigned to all other water. This resulted in a weighted average of \$2711 per acre-foot.

DEMAND CUT-OFFS FOR BENEFIT VALUES

Benefit values are applied only where there is a demand for the output by Forest users. Outputs that exceed demand are given a benefit value of zero, while those that are produced at or below the quantity demanded by consumers are assigned the benefit value described in the previous section. This is handled with the use of a demand cut-off.

Most of the outputs from the Tahoe National Forest are consumed in National and Regional markets where the quantity demanded is many times larger than the productive capacity of the Tahoe National Forest (see Chapter 3 of the EIS for a resource-by-resource description of the demand situation). For this reason demand cut-offs were needed only for Recreation Visitor Days (RVD's) and Wildlife and Fish User Days (WFUD's). For these resource outputs, demand is more localized and less than the productive capacity of the Forest in early time periods. Demand cutoffs were based on projected population growth in the TNF's local market area.

TABLE 8.4 - RECREATION DEMAND CUTOFFS

Decade	1	2	3	4	5-16
Developed Cutoff (M RVD's)	1,976.0	2,393.0	2,784.0	3,129.0	3,318.0
Downhill Ski Cutoff (M RVDs)	292.0	379.0	492.0	639.0	830.0
Dispersed Cutoff (M RVDs)	2,925.0	3,436.0	3,944.0	4,452.0	4,960.0

Dispersed recreation RVDs is the sum of background WFUDs, background dispersed recreation RVDs, habitat improvement WFUDs, wilderness RVDs, WFUDs generated by timber and range prescriptions, and other dispersed RVDs.

COSTS

All costs used in the analysis are estimates based on accounting records and the experience of project managers. Costs for applying the different multiple resource prescriptions were estimated and built into the economics tables in FORPLAN. Costs for timber, recreation, range, wildlife facilities, roads and trails, fire, and fixed minimum level costs are accounted for by the model.

Fixed costs amount to \$319 million, which is 17 percent of the normalized 1982 budget of \$187 million.

Costs were checked for reasonableness by comparing the first decade costs for the current alternative developed with the use of FORPLAN against actual expenditures for FY 1982.

I Stage II Analysis

Stage II analysis is conducted prior to the Benchmark analysis. It establishes the Soil Rent Values (bare-land soil expectation values) and the Forest Rent Values (Current Value plus Soil Rent) of every proposed timber management activity, as required by 36 CFR 219.13(b) and FSM 2412.33. Soil and Forest Rent Values are calculated for every combination of analysis area, prescription,

and timing choice that will be included in the FORPLAN analysis. Both existing and regenerated prescriptions are analyzed

Forest and Soil Rent Values for every proposed timber management activity were extracted from the MATRX-RX file (columns chapter).

- Forest Rent Values varied from ~~\$-510~~ to ~~\$9,567~~.per acre
- Soil Rent Values varied from ~~\$-976~~.to ~~\$454~~. per acre

The costs and values used in the Stage-II analysis, for each proposed timber management activity, are estimated by assuming first, that no other acreage will be managed, and second, that no **Forestwide** constraints on management practices or outputs will be imposed

An important consequence of these assumptions is that the cost effectiveness of proposed timber management activities cannot be determined solely by the Forest and Soil Rent Values. For example, even if the Forest and Soil Rent Values of all the timber management activities proposed for an analysis area are negative, managing this analysis area with some of these activities may increase the PNV of a FORPLAN benchmark or alternative when forestwide management guidelines or even-flow timber harvest constraints are specified. This result has been well documented in professional forestry journals. Consequently, some timber management activities with negative Forest or Soil Rent Values are included in the FORPLAN analyses.

The Stage II analysis does ~~serve~~ to flag proposed management activities which in isolation are inefficient. This information is useful in developing management guidelines and in validating the results of the FORPLAN analysis.

It should **also** be noted that since the Tahoe matrix used the more efficient Model 2 formulation of FORPLAN, which reduces the number of redundant regeneration activities, it was not necessary to reduce the number of prescriptions as required on Forest using Model 1 formulations.

J. Socio-Economic Impact Analysis

The socio-economic environment is discussed in the **EIS**, Chapter 3, The Economic Environment and the Social Environment. The results of the socio-economic analysis of the alternatives is presented in Chapter 4, Economic Consequences and Social Consequences.

K. Constraints

Each of the resources discussed in 36 CFR 219.13 through 219.26 must be addressed by standards and guidelines, management prescriptions, or other management direction in the Forest Plan. Regional resource direction which Forests are expected to follow is in the Regional Planning Direction.

Some management requirements can be translated into modeling constraints and can be simulated or proxied in FORPLAN. Constraints are quantifiable limits placed on the linear program model to ensure that minimum or maximum acres or dollars are used or that specific minimum or maximum amounts of outputs are produced. Constraints override the objective in linear programming analysis. Thus where a predetermined level of output, minimum physical condition, or allocation is entered as a constraint, it is always achieved (or no feasible solution is found).

Output levels and other desired effects entered as constraints are assumed to contribute more to public benefits than their cost of production plus the foregone public benefits of any outputs or other effects they replace. For this reason, the interdisciplinary team tried to formulate constraints that met objectives with the lowest cost and least effect of other outputs. In most cases this required the formulation and testing of several alternative sets of constraints to determine the most cost effective set (in terms of PNV) that would meet the objectives. For Forest planning purposes constraints can be divided generally into five categories, which are discussed in the next section.

L Constraints Common to All Alternatives

1. Technological constraints. Some examples of technological constraints are
 - only those lands having the proper characteristics for ski areas (slope, snow, access, land not otherwise encumbered) are allowed to have ski area expansion or development as a management option.
 - clearcut harvest prescriptions are not available on south-facing slopes where shelterwood prescriptions are necessary to guarantee regeneration.
 - demand cutoffs limit development of developed and dispersed recreation sites
 - NFS administrative sites and electronic sites are considered suitable only for facility development.
 - Existing recreation development sites are considered suitable only for recreation
 - Timber inventory constraints by age class ensure area regulation by the end of the planning period.
 - Placer County Big Tree Grove and Babbitt Peak proposed RNA are considered suited only for Special Interest Area and Research Natural Area status, respectively.

The following discusses the modeling rules and impacts associated with minimum management requirements, timber policy constraints, minimum implementation requirements, and Forest constraints

2. Minimum Management Requirements

Constraints are needed to meet minimum management requirements or management standards. Procedures for defining the MMR's were specified by the Pacific Southwest Regional Guide. MMR's are applied to all benchmarks and alternatives but are not applied to the (FLW) unconstrained max PNV assigned with flow/LTSY constraints or the (MLV) minimum level of management FORPIAN runs. The MMR's are taken from 36 CFR 219.27 and generally represent requirements that are outside of Forest Service authority to change. They are based on statutes and regulations in contrast to manual direction or agency policy. Some examples of MMR's are: lands not available for timber prescriptions (North Fork American Wild River, Onion Creek Experimental Forest, and Granite Chief Wilderness), T&E species, viable populations, diversity, riparian areas, and soil and water productivity. MMR's are described in more detail below and in the EIS, Chapter 2, Section E, Management Direction Common To All Alternatives.

Minimum Management Requirements (MMR's) were developed for the TNF to comply with Regional Office Direction. A discussion of the modeling rules and associated impacts for each MMR follows

Capable, Available, and Suitable Land. Lands that were tentatively suitable for timber management were placed in analysis areas and were given a range of appropriate prescriptions. Lands not tentatively suitable for timber management were placed in other analysis areas where timber prescriptions were not an option. A detailed discussion of the timber suitability criteria is contained in Appendix K.

The effect of limiting the land base to only those acres that are now available, and have a reasonable chance of successful reforestation, defines the acres that are available for scheduling harvesting, reforestation, and thinning. This establishes the maximum land base available to sustained yields of timber.

Threatened and Endangered Species The bald eagle and the peregrine falcon are Federally-listed endangered species that occur on the Forest. The Lahontan cutthroat trout is a threatened species that occurs locally. The Forest will protect all species as prescribed in species recovery or management plans. Protection will be afforded by projects that do not justify constraints on other resources in FORPLAN.

Viable Populations. Goshawks Goshawks were not modeled in FORPLAN since most of the known nests were found to occur in habitat that was provided with other MMR's. Standards and guidelines provide the necessary direction to ensure habitat protection

Spotted Owls. A management scheme for each spotted owl habitat area (SOHA) was determined by alternative. The full range of FORPLAN prescriptions capable of maintaining or creating habitat for spotted owls was used in the modeling process. This range of FORPLAN prescriptions includes.

- (a) min-level prescriptions which reflect no scheduled harvest:
- (b) uneven-aged timber management prescriptions, and
- (c) even-aged timber management prescriptions.

Each SOHA was constrained to maintain 1,000 acres of suitable habitat overtime (see page 6-22).

FORPLAN was allowed to select the prescription or combination of prescriptions as well as the associated number of acres in each prescription needed to meet the habitat requirements and reflect the management scheme particular to each alternative.

Diversity. FORPLAN solutions were monitored to ensure that at least 5 percent of each vegetative seral stage combination was present for each decade

Snags On the east side of the Forest (eastside pine forest type), 7.8 to 8.4 percent of regulation classes 1 and 2 (full yields and reduced yield lands) are assigned a timber unsuitable prescription

Hardwoods. No pure hardwood stands are allowed timber management prescription choices. In the mixed hardwood/conifer stands, yield reductions are simulated to reflect hardwood standards requiring given basal areas for the hardwood component. This is done in two ways. 1) yields from every other (alternate) thinning are not counted: 2) a given percent of the stand acres regenerate to pure hardwoods.

Riparian Areas. The aquatic, riparian, and terrestrial habitat associated with riparian areas is important to a large variety of wildlife species. The riparian wildlife corridor is defined as streams and adjacent vegetative communities which are predominantly influenced by, or associated with, water. This was modeled in FORPLAN by allowing only uneven-aged timber management within 100 feet either side of perennial streams

Water Quality (or Cumulative Watershed Effects). Those Forest areas identified as sensitive watershed lands were limited to a disturbance of not more than 5 percent per decade. For modeling purposes, these areas were only allowed uneven-age timber management. A discussion of these sensitive watershed lands is in the planning records and the TNF AMS, Appendix E, 7/85

3 Timber Policy Constraints

Rotation Length. Minimum ages were established for merchantability, culmination of mean annual increment, and 95 percent of CMAI based on RAMPREP yield tables for the major forest types. These are displayed in Table B 5

TABLE 8.5 • ROTATION LENGTHS -Ages in Periods (10 years)

	Merchantable	CMAI	95% CMAI
Mixed conifer w/o thinning	4	6	5
w/ thinning	4	10	6
burned plantation	6	10	8
Red fir w/o thinning	4	10	7
w/ thinning	4	14	10
burned plantation	6	16	11
Eastside pine w/o thinning	4	9	7
w/ thinning	4	12	8
burned plantation	6	12	10
Lodgepole pine w/o thinning	4	4	4
w/ thinning	4	8	6

Sustained Yield Requirements Two constraints, inventory and growth, were used to proxy the sustained yield requirements. The inventory constraint forces an area regulation on even-age timber management in the 15th and 16th decades by requiring a proportion of the regenerated stands to be in specified age classes. The growth constraint requires that growth in the 5th and 6th decades, along with the 15th and 16th decades, is 15 percent greater than the FORPLAN-calculated long-term sustained yield.

Harvest Flow Requirements This is used only in alternatives that depart from the nondeclining, even-flow policy. In order to prevent wide fluctuations from one decade to the next, the timber output after the first decade is not allowed to change more than plus or minus 17 percent from the previous decade.

Dispersion. To proxy dispersion of clearcuts, regeneration in analysis areas totally regenerated in periods 1, 2, or 3 in the FLW unconstrained benchmark was limited by the accessibility constraint in all other benchmarks and alternatives to spread their scheduled regeneration over the first four decades. Also, FORPLAN was limited to a maximum of 15 percent regeneration cutting per decade averaged over a 20-year period.

4. **Minimum Implementation Requirements**

Constraints are needed to ensure that alternatives are minimally acceptable and implementable on the ground. Procedures for defining MIR's were specified by the Region. They are within agency control but there is little discretionary control regarding their application at the Forest level. MIR's do not apply to benchmarks but they are applied to all alternatives. Some examples of MIR's are scenic corridors for roads officially designated or eligible in the 1970 California State and County Scenic Highway System Master Plan, and maximum permitted regeneration acreage per period (18 percent). MIR's are described in more detail below and in the EIS, Chapter 2, Section E, Management Direction Common to All Alternatives.

Scenic Highways Requirements were placed on lands viewed from officially designated State and County Highways, and routes on the 1970 State Scenic Highway Master Plan, so that scenery would be managed along heavily traveled scenic highways. These include portions

of Interstate **EO** and State Highways **49, 20,** and **89**. This was achieved by assigning highway foreground and middle ground to a visual quality of partial retention. **The** area was delineated in the Forest planning file and the acres were identified by analysis area.

The partial retention constraint affects **120,772** acres of suitable land and limits the amount of regeneration cutting per decade. This has the effect of lengthening rotations which in turn reduces yields over time. Most **of** these acres are already constrained by the more restrictive minimum management requirement.

5. Forest Constraint Common to All Alternatives

Constraints are needed to ensure implementability at the local level. They are based on Forest (rather than Regional) conditions, which are in addition to **MMR's**. These constraints are not applied to all benchmarks but are applied to all alternatives except the constrained economically efficient alternative (**CEE**). Forest constraints unique to an alternative are discussed under alternative descriptions

Carman Valley Watershed For all alternatives considered in detail, limits were placed on resource activities allowed to occur in the sensitive Carman Valley Watershed. All streamside management zones within the watershed were unsuited for timber management. This affected **598** acres. The remainder of the suitable timber lands were managed under long rotations to reduce disturbance within the watershed. This resulted in **6,738** acres managed at lower yields than could have been realized with intensive even-age management.

6. Constraint Analysis

For a detailed discussion of the constraint analysis by subtraction, refer to the EIS, Chapter **2**, Section F, Constraint Analysis, and Table **2.18**.

M. Benchmarks

This section presents the required benchmarks' modeling specifications. For a complete discussion of the purpose and results of the benchmarks, refer to Chapter **2** of the EIS, Benchmarks. The analysis of constraints is presented in Chapter **2**, Section F, Constraint Analysis. The outputs and economics are displayed in Table **2.1** of the EIS.

(17MLV) - MINIMUM LEVEL OF MANAGEMENT (BACKGROUNDS)

1. Theme

The purpose of this benchmark is to determine background ("Background" in this context refers to outputs which are naturally occurring and not induced by management activities) outputs and fixed costs associated with maintaining the Forest and Federal ownership. Because this is primarily an accounting tool, the phase-in period that would be needed if minimum level were actually implemented is ignored.

2. Modeling Specifications

- a. Objective The objective is to minimize costs for 12 decades.
- b. Timber. No timber is produced. There is no background timber
- c. Range. No AUM's are produced There are no background AUM's
- d. Water. Only background water is produced because there is no timber harvest
- e. Spotted Owls and Threatened and Endangered Species The number of spotted owls is directly related to the number of acres of suitable habitat. T&E species maintenance and recovery projects would be implemented.
- f. Wildlife and Fish User Days Only background WFUDs are produced. No direct habitat improvement projects are undertaken in this benchmark.
- g. Developed Recreation All developed sites would be closed. There are no background developed site RVDs
- h. Dispersed Recreation Only background dispersed use RVD's are produced All background dispersed use RVDs receive low standard benefit values.
- i. Roads and Facilities. No Forest roads are constructed or maintained. Forest roads are assumed to be closed to the public. Facilities (office buildings, barracks, etc.) would be maintained at Level I, Health and Safety.
- j. Protection. The fire management budget is set at minlevel for this benchmark only The minlevel budget provides for detection and initial attack only

(17FLW) • UNCONSTRAINED MAXIMUM PNV ASSIGNED WITH FLOW/LTSY CONSTRAINTS.

1. Theme

This benchmark displays the maximum PNV allocation of resources, with no constraints except tentative suitability and maintenance of long-term sustained yield

2. Modeling Specifications

- a. Objective. Resources are allocated to maximize PNV.
- b. Timber. Minimum rotation is set at merchantable age The long-term sustained yield constraint provides for regulation of 90 percent of the forest by the end of the planning 160-year period (LTSY). Other timber policy constraints are removed. Harvest flow constraints limit the variability in harvest from one period to the next to provide stability to the local economy Timber costs and values are trended.
- c. Range. There are two types of range, permanent and transitory. Permanent range land is assumed to be GX and SX strata with less than 50 percent slope that are not currently in the reforestation backlog These lands are managed at one of three intensities The AUM per acre coefficient varies with intensity. FLW has the maximum land in high intensity management Transitory range is tied to timber harvest by regeneration changes, first increasing and then decreasing over time An additional source of AUM's is the reforestation backlog AUM's are derived from this source for the first three decades only since the backlog is assumed to be reforested by 1985 AUM coefficients vary with strata and cutting method Transtory range is assumed to be managed at the extensive level. Two additional intensity levels apply to permanent range These are intensive and environmental.

- d. Water. In addition to the background water, which is discussed under Minlevel, additional water is produced, in order of decreasing quantities, by regeneration, reforestation backlog, range conversion, and burned acres. There is a decay function for induced water, which reaches zero after two decades beyond the initiation of the activity

Riparian areas (SMZs) do not constrain timber management in this benchmark

- e Spotted Owls and Threatened and Endangered Species. The model is not constrained by protecting spotted owl or threatened and endangered species habitat.
- f WFUDs There are three components to WFUDs background, habitat improvement, and timber and range-induced. Timber suitable acres is the linkage which reflects KV work in habitat improvement. An implementation constraint applies to all the habitat improvement projects

There are three types of structural habitat improvement projects: those which have an infinite life span, those which are temporary, such as wood duck boxes, where the costs are incurred for periodic replacements, and those which are constructed and maintained rather than replaced, such as guzzlers.

- g Developed Recreation The model is free to choose the production of RVD's from existing and potential developed sites and ski hills at the level and amount which maximizes PNV, not to exceed demand. Downhill ski areas are always managed at full standard. Developed sites are managed at one of three levels—shutdown, low standard, or full standard.
- h Dispersed Recreation Dispersed recreation production is constrained to be less than or equal to demand. This demand cutoff represents the summation of background WFUDs, background dispersed RVDs, wilderness RVDs, timber-induced and project WFUDs, and induced dispersed RVDs

There are two management intensities for induced dispersed RVDs, low standard and full standard. Background is assumed to be managed at low standard, and the induced will be managed at full standard (including rehabilitation) to obtain the best return to PNV.

- i Roads and Facilities. Road construction and reconstruction is a by-product of timber harvest and developed recreation. Road construction, reconstruction, and maintenance associated with timber harvest is a function of acres of even-age harvest in accessed and nonaccessed land. Road construction associated with recreation is generated by constructing new developed recreation sites. Miles of new construction and reconstruction are generated based on acres of newly constructed sites. Road maintenance associated with recreation is related to acres in existing and newly constructed sites. There are no roads associated with downhill ski areas. The permittee is assumed to be responsible for road construction and maintenance.

The model is provided with five levels of facilities management, three of which are custodial, and two represent new construction. These levels of management are described in Appendix E of the AMS. Because there is no benefit attributed to facilities management, the model will always choose the health and safety level which is the least costly, unless constrained to a higher level.

- j. Protection. There are three fire management options and five budget levels which result in fifteen combinations in addition to the minlevel fire management organization. The minlevel organization is only applicable to the minlevel benchmark. The model chooses the fire management option which minimizes the cost plus net value change. Net value change is represented by the effect of fire on a timber, forage, and wildlife habitat. The effect of fire on forage and wildlife habitat is negative or positive depending upon the intensity. Acres of mature timber burned are supplied by the model and vary with the option. In addition to mature timber, it is assumed that one and one-half percent of plantation

acres will be burned each decade, and an additional amount of burned plantation acres are supplied by the model to reflect different options.

(17MMR) - MAX PNV ASSIGNED VALUES WITH MMR-NDY-CMAI

1. Theme

The theme of the MMR (Minimum Management Requirement) benchmark is to display outputs possible if management was constrained only to meet legal requirements.

The Minimum Management Requirements are specified by 36 CFR 219.27, National Forest Land Management Planning Direction.

2 Modeling Specifications

- a. Objective. The model allocates resources to maximize PNV for 12 periods, subject to constraints summarized below.
- b. Timber. Timber policy constraints CMAI, LTSY, NDY, and dispersion are applied. Timber costs and values are trended.
- c. Range. Forage lands and timber prescriptions produce AUM's. The discussion in benchmark FLW applies to MMR.
- d. Water and Soil. The discussion in the FLW benchmark pertaining to the modeling of water yield also applies to MMR.

Riparian areas (SMZ) are modeled as regulation class III. All riparian areas are assumed to be 100' wide on both sides of all perennial streams and lakes.

Sensitive watershed lands as defined in Appendix E of the AMS are modeled as Regulation Class III, which is a proxy for 200-year rotation.

- e. Spotted Owls and Threatened and Endangered Species. The model is constrained to protect 33,000 or more effective acres of spotted owl habitat. Land is assigned an effective habitat index based on vegetation type and age. The special requirements of spotted owl territories are proxied in the model by forcing 25,900 acres to be allocated from Regulation Class I, II, IV, and wilderness.
- f. WFUDs. Same as FLW.
- g. Developed Recreation. Same as FLW.
- h. Dispersed Recreation. Same as FLW except Granite Chief Wilderness acres get wilderness cost and benefits.
- i. Roads and Facilities. Same as FLW.
- j. Protection. The model selects the most cost effective budget level and mix in each period. Same as FLW.

(17MKV) MAX PNV MARKET VALUES ONLY WITH MMR-CMAI-NDY

1 Theme

This benchmark demonstrates the sensitivity of the solution to nonmarket resources' (water, WFUD's, and dispersed and wilderness recreation RVD's) price assignments. Nonmarket

outputs are valued and contribute to PNV after the solution is found and do not affect the allocation.

2. Modeling Specifications

- a. Objective. Resources are allocated to maximize PNV for 12 periods, with only timber, range and developed recreation being valued.
- b. Timber. The discussion under the MMR benchmark applies to MKV.
- c. Range. Same as FLW.
- d. Water and Soil. Same as MMR but water's value is not taken into consideration to determine the optimum allocation.
- e. Spotted Owls and Threatened and Endangered Species Same as MMR.
- f. WFUDs. Same as FLW.
- g. Developed Recreation Same as FLW.
- h. Dispersed Recreation. Same as FLW except dispersed recreation is not valued for the allocation.
- i. Roads and Facilities. Same as FLW.
- j. Protection. Same as FLW.

(17TBR) MAX TIMBER FOR ONE PERIOD WITH MMR-NDV-CMAI AND ECONOMIC ROLLOVER

1. Theme

The theme of this benchmark is to define the maximum timber output possible for the first decade under the constraints of NDV, CMAI, and MMR. After determining the maximum yield under these constraints, it is used as a constraint in a second run, which allocates resources to meet this goal and maximize PNV (economic rollover).

2. Modeling Specifications

- a. Objective. The objective function of the model is to maximize timber yield rather than PNV. The constraints are identical to MMR.
- b. Timber. Same as MMR.
- c. Range. Same as FLW.
- d. Water and Soil. Same as MMR.
- e. Spotted Owls and Threatened and Endangered Species. Same as MMR.
- f. WFUDs. Same as FLW.
- g. Developed Recreation. Same as FLW.
- h. Dispersed Recreation. Same as MMR.
- i. Roads and Facilities. Same as FLW.

j. Protection. Same as FLW.

(17WLN) MAX PNV WITH ALL ROADLESS AREAS ALLOCATED TO WILDERNESS

(No longer appropriate since signing of California Wilderness Act **9/28/84**)

1 Theme.

The theme of this benchmark is to display the opportunity cost associated with a maximum wilderness allocation.

2. Modeling Specifications.

The constraints are identical to those of the MMR run with the additional stipulation that all inventoried roadless areas are allocated to wilderness.

a. Objective. Same as MMR

b. Timber. Same as MMR

c. Range. Same as FLW.

d. Water and Soil. Same as MMR.

e. Spotted Owls and Threatened and Endangered Species. Same as MMR.

f. WFUDs Same as FLW.

g. Developed Recreation. Same as FLW.

h. Dispersed Recreation Same as FLW. In this benchmark all inventoried roadless areas are allocated to wilderness

i. Roads and Facilities. Same as FLW

j. Protection. Same as FLW.

(17RGN) MAX RANGE FOR 50 YEARS AND ECONOMIC ROLLOVER

1 Theme

The theme of this benchmark is to display the maximum capability of the Forest to provide commercial livestock grazing over five decades. The run is completed in two stages. In the first stage the resources are allocated to define maximum livestock forage potential. In the second stage, the production potential defined in the first stage is added to the model as a constraint and the model allocates resources to maximize PNV.

2 Modeling Specifications

a. Objective. The objective of the model is to maximize production of AUM's for one period.

b. Timber Same as MMR

c. Range. Same as FLW.

d. Water and Soil Same as MMR.

e. Spotted Owls and Threatened and Endangered Species. Same as MMR.

- f. WFUD's. Same as FLW.
- g. Developed Recreation Same as FLW.
- h. Dispersed Recreation Same as MMR.
- i. Roads and Facilities. Same as FLW.
- j. Protection. Same as FLW.

(17H20) MAX WATER FOR 50 YEARS AND ECONOMIC ROLLOVER

1. Theme

The theme of this benchmark is to define the maximum capability of the Forest to provide water over five decades. The run is completed in two stages. In the first stage, resources are allocated to define maximum water potential over 5 decades. In the second stage, these water production levels are added to the model as constraints, and the model allocates resources to maximize PNV. The objective of this run is to allocate resources to maximize water yield subject to the constraints of the MMR run.

2. Modeling Specifications

- a. Objective. The objective of the model is to allocate resources to maximize water production subject to the constraints of MMR benchmark.
- b. Timber Same as MMR
- c. Range. Same as FLW.
- d. Water and Soil. Same as MMR.
- e. Spotted Owls and Threatened and Endangered Species. Same as MMR.
- f. WFUDs. Same as FLW
- g. Developed Recreation Same as FLW
- h. Dispersed Recreation. Same as MMR.
- i. Roads and Facilities. Same as FLW.
- j. Protection. Same as FLW.

III. ALTERNATIVES

For definition of alternatives and a discussion of the process used to formulate alternatives, see the EIS, Chapter 2, Section B, Alternative Development Process and Section E, Alternatives Considered in Detail. For a more complete discussion of the themes and management direction of all the alternatives, refer to Chapter 2 of the EIS. (Outputs attributed to each alternative are displayed in Tables 2.5 through 2.10.) Chapter 2 discusses all constraints applied to each alternative and Chapter 4 discusses how those constraints affect the environmental consequences.

The marginal cost of constraints is displayed and discussed in the EIS, Chapter 2, Section F, Constraint Analysis. PNV is analyzed for alternatives in Chapter 2, Section F, in the tables, figure, and narrative under Economic Effects. Integration of economic analysis with alternative formulation is discussed in Chapter 2,

Section B, Alternative Development Process. Tradeoffs among alternatives are described in Chapter 2, Section F, Constraint Analysis.

Issues, concerns, and opportunities identified on the TNF are discussed in the **EIS**, Chapter 2, Section B, Alternative Development Process, and in Appendix A Resolution of IC&O's is described by alternative in **EIS** Table 2.21, Comparison of Alternatives by Major TNF Issues, Concerns, and Opportunities

The purpose, criteria, and assumptions, and relationships to IC&O's for each alternative is described in the **EIS**, Chapter 2, Section E, Alternatives Considered in Detail

Economic, social, and environmental consequences are described in Chapter 4 of the **EIS**.

TABLE B.6 - COMPARISON OF ALTERNATIVES BY DISCOUNTED COST

Alternative	Discounted 1/ Cost \$MM	Change in Cost \$MM
CMD	635	93
RPA	542	15
PRF	527	25
UNE	502	26
NMK	476	30
CUR	446	

1/ Net of MLV Costs

TABLE B.7 - COMPARISON OF ALTERNATIVES BY PRESENT NET VALUE

Alternative	PNV \$MM 1/	Change in PNV \$MM
CMD	2733	62
RPA	2671	87
CUR	2584	146
PRF	2438	92
UNE	2346	22
NMK	2324	

1/ Net of MLV Costs

The major types of constraints that were modeled in FORPLAN are summarized in Table B.8 and as follows for each alternative:

A Alternative PRF - Preferred

1. Theme

Achieve a broad range of commodity and amenity benefits that meet short-term needs while retaining long-range management options. Emphasize a mixture of commodity production and amenity benefits that maximizes net public benefits while responding to the planning issues

2. Modeling Specifications

- a. Objective. 1) Maximize timber for one decade subject to the constraints summarized below: 2) maximize PNV for 12 decades to ensure economic efficiency.
- b. Timber. Timber policy constraints of CMAI, NDY, LTSY, and dispersion apply. The MMR's, MIR's, and Carman Valley Watershed constraint apply. Babbin Peak and Sugar Pine Point are allocated as RNA's, while Placer County Big Tree Grove, Devils Postpile, Glacier Meadow, Grouse Falls, Meadow Lake, Mason Fen, and Sagehen Headwaters are allocated as SIA's. Mixed conifer above 5,500 feet that is variety class A with an initial visual quality objective of retention or preservation is managed under long rotation. Long rotations are necessary primarily to meet partial retention VQO established for the higher elevation forest types. A clearcutting to shelterwood ratio, by volume, of at least 3:1 is maintained to reflect implementation concerns. Group selection is limited to tractor ground in five selected compartments (one compartment per Ranger District). Eastside pine volume harvested is limited to no more than 6 MMBF per year during decades 1 and 2 to reflect current market conditions. Implement at least 600 acres per year of shelterwood overstory removal in decade 1.
- c. Range. The eastside pine is allocated to intensive range management practices in dual use with timber management. These intensive range practices are constrained to occur in periods 3 through 5. Period 1 is to be used for studying the application of the prescription.
- d. Water and Soil. MMR's are applied. In addition, perennial streamside management zones (SMZ's) are modeled as variable widths and assigned to long rotation (Regulation Class III). Intermittent SMZ's are assigned long rotation. Sensitive watershed lands are also assigned the long rotation prescription.
- e. Spotted Owls and Threatened and Endangered Species. All owl territories are collapsed into owl analysis areas and modeled to maintain 1,000 acres of suitable habitat at all times. Territories are preassigned management choices based on the Forest biologist's knowledge of site conditions and likely management options. (See Table B.8.)
- f. WFUDs. WFUDs are modeled by the procedure described by FLW.
- g. Developed Recreation. Developed recreation RVDs are constrained to meet demand for 5 decades. Expansion of developed recreation is emphasized in the following areas: Boca, Prosser, Stampede, French Meadows, Jackson Meadow, Sugar Pine and Bullards Bar Reservoirs; Truckee and North Yuba Rivers areas: Sierra Buttes; and Interstate Highway 80 area. New ski areas and ski area expansion are allowed. All visual sensitive travel routes are managed to maintain their visual quality.
- h. Dispersed Recreation. The southern two-thirds of the former Granite Chief roadless area (MA 080) is allocated to wilderness per the California Wilderness Act of 1984. Dispersed recreation is modeled as described in FLW.
- i. Roads and Facilities. Roads are modeled as described in MMR. Facilities are managed at level III.

- j. Protection. Same as FLW.
- k. Hardwoods. No pure hardwood stands are allowed timber management prescription choices. In the mixed hardwood/conifer stands, yield reductions are simulated to reflect hardwood standards requiring given basal areas for the hardwood component. This is done in two ways: 1) yields from every other (alternate) thinning are not counted; 2) a given percent of the stand acres regenerate to pure hardwoods

B. Alternative CUR - Current Management

1 Theme

The theme of this alternative is to estimate the expected outputs and services provided if current allocations, directions, policies, and practices were to continue. Outputs will be greater than or equal to the 1982 levels. The budget is constrained to the 1982 level for the planning horizon.

2 Modeling Specifications

- a. Objective. Maximize PNV for 12 decades subject to the 1982 budget.
- b. Timber. Constraints of NDY, CMAI, LTSY, and Dispersion are applied. Land is assigned Regulation Classes I, II, III, and IV based on current multiple use unit management philosophy. Babbitt Peak is allocated as an RNA, and Placer County Big Tree Grove is allocated as an SIA.

The model is constrained to provide 1,000 acres of shelterwood harvest for four decades.
- c. Range. Same as MMR.
- d. Water and Soil. Same as MMR.
- e. Spotted Owls and Threatened and Endangered Species. Same as MMR.
- f. WFUD's. WFUDs are modeled by the procedure described by FLW.
- g. Developed Recreation. All developed sites are managed at low standard. Downhill ski areas are managed at full standard. No expansion of developed sites is permitted.
- h. Dispersed Recreation. Same as MMR.
- i. Roads and Facilities. Same as FLW benchmark. Roads and facilities are managed at level III.
- j. Protection. The base budget level and current option are specified for all periods.

C. Alternative RPA - 1980 RPA

1 Theme

This alternative will determine how the 1980 RPA program, distributed to the Forest through the PSW Regional Guide, could best be implemented.

2 Modeling Specifications

- a. Objective. Maximize PNV for 12 decades subject to the constraints summarized below.
- b. Timber Timber policy constraints of CMAI, NDY, LTSY, and dispersion apply. Timber harvest targets are displayed below. The MIR's and Carman Valley Watershed apply. Babbin Peak is allocated as an RNA, and Placer County Big Tree Grove is allocated as an SIA.

	1	2	3	4	5
MMBF/YR	173.0	186.0	198.4	198.4	198.4

- c. Range Range outputs are constrained to meet or exceed the Regional Forester's targets of 30,400 AUM's per year by 2030 AUM's are modeled as described in FLW.
- d. Water and Soil. Water production is modeled as discussed under FLW.
- e. Spotted Owls and Threatened and Endangered Species. There is no RPA target for spotted owls Spotted owl production is modeled as described in MMR.

Threatened and endangered species are modeled as described under MMR.
- f. WFUDs. Land comprising winter deer range is allocated to long rotation.
- g. Developed Recreation Developed recreation RVDs are modeled as described in FLW The model is constrained to meet or exceed the RPA target displayed below.

	1	2	3	4	5
MMRVD's	1.93	2.06	2.20	2.53	2.80

- h. Dispersed Recreation. Dispersed recreation is modeled as described in MMR. In RPA, it is constrained to meet or exceed the RPA targets displayed below.

	1	2	3	4	5
MMRVD's	2.61	2.77	2.90	3.13	3.25

- i. Facilities and Roads Facilities are managed at level III Roads are modeled as described in MMR There is no RPA target for facilities.

j. Protection. Same as FLW.

D. Alternative **CMD - Commodity**

1. Theme

Achieve high timber commodity outputs while providing amenity benefits at economically efficient levels. Emphasize intensive management of the timber resource on forest lands capable of producing at least 20 cubic feet of timber per acre per year. Resolve in favor of the timber resource any conflicts with other commodity or amenity resources.

2. Modeling Specifications

- a. Objective. 1) Maximize timber for ten decades subject to the constraints summarized below; 2) maximize PNV for 12 decades to ensure economic efficiency.
- b. Timber. Timber policy constraints apply. The MMR's, MIR's, and Caman Valley Watershed constraints apply. Babbin Peak and Sugar Pine Point are allocated as RNAs. The following are allocated as **SIA's**: Placer County Big Tree Grove, Devils Postpile, Glacier Meadows, Grouse Falls, Meadow Lake, Sagehen Headwaters, and Mason Fen. Limit group selection management to 150 to 250 acres per year and limit clearcutting to 2,300 to 3,500 acres per year.
- c. Range. Same as FLW.
- d. Water and Soil. Perennial streamside management zones are modeled as 100-foot wide and assigned Regulation Class III. Intermittent SMZ's are not restricted. Soils are modeled as in the PRF alternative.
- e. Spotted Owls and Threatened and Endangered Species. Same as MMR.
- f. WFUD's. WFUDs are modeled by the procedure described by FLW.
- g. Developed Recreation. Same as PRF alternative.
- h. Dispersed Recreation. Same as MMR.
- i. Roads and Facilities. Same as Alternative PRF.
- j. Protection. Same as FLW.

E. Alternative **NMK - Nonmarket**

1. Theme

Achieve high output levels of amenity (nonmarket) resources with commodity (market) outputs at a production level that will not result in environmental degradation. Emphasize amenity resources, such as fish and wildlife, water quality and recreation. Resolve in favor of the amenity resources any conflict with market resources.

2. Modeling Specifications

- a. Objective. 1) Maximize 4 B/C habitat type (large tree stage with canopy cover at 40 percent or greater) for wildlife associated with old-growth forests, 2) maximize timber for one decade subject to the constraints summarized below; 3) maximize PNV for 12 decades to ensure economic efficiency.

- b. Timber. Timber policy constraints of CMAI, NDY, LTSY, and dispersion apply. The MMR's, MIR's, and Carman Valley Watershed constraint apply. All proposed RNAs and SIA's are allocated. All west side regulated forest above 5,500 feet are managed under long rotation (Regulation Class II). All 6G timber stands (larger trees, two storied with canopy cover at 40 percent or greater) declared unsuitable for timber harvest.
- c. Range. Constrained to reduce the level of production to 1,000 AUM's annually by decade 5.
- d. Water and Soil. Same as PRF alternative.
- e. Spotted Owls and Threatened and Endangered Species. Same as PRF alternative, plus 7 additional territories that receive no scheduled timber harvest (*see* Table B E).
- f. WFUDs. WFUD's are modeled by the procedure described by FLW.
- g. Developed Recreation. Developed recreation RVDs are modeled as described in FLW. Both developed site and ski area development are allowed in areas not currently identified as mature forest habitat. The initial recommended visual quality objectives are met.
- h. Dispersed Recreation. All former inventoried roadless areas, are allocated to SPNM (TM-UNS). Dispersed recreation is modeled as described in FLW.
- i. Roads and Facilities. Roads are modeled as described in MMR. Facilities are managed at level II.
- j. Protection. Same as FLW.
- k. Hardwoods. No pure hardwood stands are allowed timber management prescription choices. In the mixed hardwood/conifer stands, yield reductions are simulated to reflect hardwood standards requiring given basal areas for the hardwood component. This is done in two ways: 1) yields from every other (alternate) thinning are not counted, 2) a given percent of the stand acres regenerate to pure hardwoods.

F. Alternative UNE - Uneven-aged

1. Theme

Achieve a broad range of commodity and amenity benefits that meet short-term needs while retaining long-range management options; obtain at least 50% of the harvested volume from uneven-age systems. Emphasize a mixture of commodity production and amenity benefits that optimize net public benefits while responding to the planning issues.

2. Modeling Specifications

- a. Objective. 1) Maximize timber for one decade subject to the constraints summarized below; 2) maximize PNV for 12 decades to ensure economic efficiency.
- b. Timber. Same as PRF alternative except the model is formulated to ensure that group Selection harvesting contributes at least 50 percent of the total harvest volume.
- c. Range. Same as PRF alternative.
- d. Water and Soil. Same as PRF alternative.
- e. Spotted Owls and Threatened and Endangered Species. Same as PRF alternative.

- f. WFUD's. Same as PRF alternative.
- g. Developed Recreation. Same as PRF alternative.
- h. Dispersed Recreation Same as PRF alternative.
- i. Roads and Facilities. Same as PRF alternative.
- j. Protection Same as PRF alternative.
- k. Hardwoods Same as PRF alternative

IV. OTHER MODELS

This section gives a brief description of the other models used to generate input data for use in FORPLAN and to interpret output data from FORPLAN

A. **RAMPREP**

RAMPREP is a PSW Region Timber Management model that is used to develop timber yield tables. RAMPREP timber yield tables are based on the Tahoe NF's 1980 Forest inventory data. RAMPREP summarizes the potential yields of the forest based on the 1980 inventory. For a detailed discussion of how RAMPREP calculates the potential yields, *see* The Region Five Timber Inventory Process, July 1981.

B. **Fire Management Analysis Process**

The fire management analysis process is comprised of four levels of analysis and a series of eight computer programs. (For a complete description of the fire management analysis process, *see* FSH 5109 19-National Fire Management Planning and Analysis Handbook.) Of the four levels of analysis, only **two** (described below) are used in the Forest planning process; the other two levels affect implementation and evaluation. The eight computer programs are simulators and report writers used to define the historical and current fire management situations and to evaluate candidate fire management fuels, prevention, detection, and suppression programs.

Fire Management Analysis Level I is basically an analysis of the historical and current fire management situation using fire and weather information, records of fire occurrences, and fire behavior (number of fires, acres burned by fire size and intensity). Some uses of Level I analysis are:

1. Display the general effectiveness and cost, including FFF, of the current fire management program. This program cost may be used as a basis for estimating expected future costs where the fire program is relatively stable and will not vary significantly between prescriptions on a Forestwide basis.
2. As a tool to aid the formulation and development of organizations in response to Forest Plan EIS alternatives and prescriptions. Level I analysis identifies areas which can be further analyzed in the areas of prevention, suppression, and fuels management areas.

Fire Management Analysis Level II is an analysis of various fire management program options (a suppression mix versus prevention), budget levels (costs), and their effectiveness. This analysis is based upon the simulation of representative fires using varying fuel models, differing suppression resources, historical occurrence patterns, and by changing occurrence patterns based upon prevention efficiency. Some uses of Level II analysis are:

1. Evaluate fire program options appropriate for the Forest Plan EIS alternatives analyzed by FORPLAN. This provides detailed resource output, net value change, and program cost data.

for selection of the most efficient program level where fire program cost and effectiveness will affect the choice between these alternatives

2. Evaluate the efficiency of fire program options for a number of alternative management prescriptions for the Forest Plan EIS alternatives to provide general estimates of fire program cost and consequences for FORPLAN analyses.
3. Evaluate the effectiveness of fire program options for a Forest Plan EIS alternative within a constrained budget to establish the most effective program mix where the budget level is fixed.

From Fire Management Analysis Levels I and II, inputs by alternative to FORPLAN are:

1. Probability of acres burned
2. Various program costs reflecting different fire management organizations.
3. Suppression costs reflecting the fire management organizational efficiency.

FORPLAN results by alternative are:

1. Acres burned.
2. Suppression costs.
3. Net value change for resources.
4. Optimum organization and budget level by period.

C. Regional Industrial Multiplier System (RIMS)

The U.S. Department of Commerce's Regional Industrial Multiplier System (RIMS) was used to develop impact multipliers and employment and income estimates for the alternatives analyzed in the EIS. (Industry - Specific Gross Output Multipliers for BEA Economic Areas, Regional Economic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce, January 1977.) This system provides input-output model multipliers for 56 industrial sectors for Bureau of Economic Analysis (BEA) Economic Area 168 (Sacramento Area). Most of the economic activity associated with the Tahoe National Forest takes place within BEA Economic Area 168. BEA Economic Area 168 includes Nevada, Placer, and Yuba counties

Estimates of historical expenditures by sector associated with Forest outputs and purchases from the local economy were used with the RIMS input-output model multipliers to develop impact multipliers. These impact multipliers were used to estimate employment and income effects of the alternatives.

A number of assumptions used in the input-output modeling technique must be kept in mind when interpreting the resulting income and employment estimates:

1. Historical transaction patterns associated with Forest outputs and purchases are assumed to hold in the future.
2. Transaction patterns (production functions) for industries in the local economy are assumed to be similar to those in the national economy and are assumed to hold in the future.
3. Income and employment impacts are assumed to occur in the same time period as the underlying changes in Forest outputs and purchases (no lagged effects are assumed).

As a result of these basic assumptions, employment and income effects estimated for the alternatives have relatively low reliability in absolute terms in future time periods. However, the income and employment estimates are reasonably accurate indicators of relative changes between the alternatives in the first decade.

D Effective Alteration

The EFFALT cumulative impact thresholds are applied in FORPLAN to limit timber harvesting activities and thereby assure landscape alterations do not exceed the levels associated with desired VQO's. Perspective plot computer simulations were the primary tools used to establish these thresholds in the effective alteration approach. These simulations were developed (chiefly on HP 9845 hardware) by Northern California Forest Service Landscape Architects, including Keith Renner, formerly of the TNF. The most critical and common situations modeled were middleground landscapes with partial retention VQOs (Partial retention middleground is the primary application of EFFALT on the TNF.) Topographic and timber stand data were fed into the computer to simulate current conditions. Varying rotation lengths and harvest entry rates were then tested by modeling all units into the perspective plots. The resultant simulations of altered landscapes were then visually examined to determine maximum limits of alteration permissible under the given VQOs. Thus, the actual correlations of harvesting rates and total effective alteration to VQO's were based on the professional judgment of Forest Service landscape architects. For similar situations, these judgments were highly consistent. They were further corroborated by field inspection and aerial photos compared to EVC mapping.

The harvest entry rates found to be acceptable for the partial retention VQO assumed visual mitigation of unit shaping, distribution, and edge treatment. The rates vary with the visual absorption capability (VAC) of the model area, the VAC correlates most strongly with slope, existing vegetative patterns, distance zones, and vegetative growth and recovery rates. An average case (Medium Ste-Medium VAC) was assumed to apply to all situations on the TNF except red fir sites, which were done on middleground landscapes; the total EFFALT percentages established from this modeling have also been applied in FORPLAN to foreground and background landscapes.

TABLE 8.8 - CONSTRAINTS USED BY ALTERNATIVES

CONSTRAINTS	PRF Preferred	CUR Current	RPA 1980 RPA	CMD Commodity	NMK Nonmarket	UNE Uneven-age
1 Objective Function	Max PNV	Max PNV	Max PNV	Max PNV	Max PNV	Max PNV
2 Timber Policy Constraints -CMAI	yes	yes	yes	yes	yes	yes
3 Minimum Mgmt. Requirements	yes	yes	yes	yes	yes	yes
4 Minimum Implementation Req's	yes	yes	yes	yes	yes	yes
5 Carman Valley Watershed	yes	yes	yes	yes	yes	yes
6 Budget Constraint (\$MM)	N/A	187	N/A	N/A	N/A	N/A
7 Hardwoods						
-Pure hardwood harvest	0	0	0	0	0	0
-.% Hardwood/conifer regenerating to hardwoods	50	0	0	0	50	50
-% Mixed conifer regenerating to hardwoods	7	0	0	0	7	7
8. Proposed RNA's (acres)	2,266	1,061	1,061	1,686	2,824	2,266
9 Proposed SIA's (acres)	886	346	346	886	36,333	886
10 Rangeland Conversion (acres)	-0-	-0-	28,035	-0-	-0-	-0-
11 Visual Quality Constraints	Many	Some Hwy's	Some Hwy's	Min Hwy's	Many Hwy's	Many Hwy's
12. Develop New Ski Areas	yes	yes	restrict	yes	restrict	yes
13 Develop New Rec Sites	Demand	no	yes	yes	yes	yes
14 Other Timber Management						
• Group selection requirements	Allocate at least 11,200 ac	no reqmt	noreqmt	150-250 ac/yr	no reqmt	Contribute at least harvest
-Clear cutting controls	CC-vol: SW-vol 3 1 600/1/12	None	None	2,300-3,500 ac/yr	50 % of 3-acre openings	None
-Minimum shelterwood acres (dec 1)	None	1,000/1/12	None	None	Yes	None
-Yield reductions due to lack of herbicide use	6 MMBF/Yr	None	None	None	None	6 MMBF/Yr.
-Upper limit on eastside pine (dec 1-2)	No	No	No	No	Yes	No
- 6G stands declared unsuitable	No	No	No	No	Yes	No
15 Fire program option allocation	BASE/CUR	N/A	N/A	N/A	N/A	NIA
16 Spotted Owl Options (No of SOHA's)						
- No scheduled harvest	22	1	1	1	24	22
- No scheduled harvest or uneven-aged	4	0	0	0	4	4
- All options	7	32	33	32	7	7
- Total number of SOHA's 1/	33	33	34	33	35	33

1/ Refers to constraints in FORPLAN n that the NMK alternative is cited with 5 additional SOH/ (with no scheduled harvest) in Chap. 4 of the FEIS. This is due to the primary objective function of maximizing the 4 B/C habitat type in that alternative. See Tab 4.42, Chap. 4 and Appendix P of the FEIS.

APPENDIX C
SPECIAL AREAS

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APPENDIX C

SPECIAL AREAS

A. INTRODUCTION

Five potential Research Natural Areas (RNA) and 18 potential Special Interest Areas (SIA) have been identified on the Tahoe National Forest. These areas are also briefly described in Chapter 3 of this EIS and their locations are displayed on the map titled 'Proposed Special Interest and Research Natural Areas' that is found in the map packet.

Research Natural Areas are recommended to the Chief of the Forest Service to preserve examples of significant natural ecosystems for purposes of research and ecological study and to maintain gene pools. To accomplish these goals, management activities are directed toward the protection and preservation of the botanical elements and their ecosystems for which the RNA's are established.

The criteria used to evaluate and determine if the Tahoe National Forest proposed an area for RNA designation in the Forest Plan are as follows: The ecological attributes of the area; the theme of the alternative (what emphasis is on other attributes); land ownership; current and proposed land uses; and effects of designation on other resources.

Special Interest Areas are established to protect, and where appropriate, foster public use, study, and enjoyment of areas with scientific, scenic, historical, geological, botanical, zoological, paleontological, or other special characteristics. Management activities within SIA's are less restricted than within RNA's. For example, roads, trails, and recreation or interpretive facilities may be built within an SIA to facilitate public use. Vegetative management may occur to the extent that it is compatible with the SIA purpose and management objectives.

National Natural Landmarks (NNL) are mostly classified RNA's or SIA's which possess exceptional values or qualities that illustrate or interpret the natural heritage of the Nation. The National Park Service identified a number of themes that reflect a wide range of landforms, geology, and land and water ecosystems found in the United States. They also developed a set of criteria for determining whether sites or areas possess sufficient values to warrant registration as NNL's. If further studies indicate that some or all of the SIA's or RNA's warrant NNL registration, the areas will then be managed to preserve their significant qualities; this may constrain National Forest management activities in those areas. Only those activities which do not interfere with the purpose for which the area was designated, or alter its integrity, will be permitted.

To aid understanding, readers should familiarize themselves with the different management prescriptions (*see* the EIS, Chapter 2, Management Prescriptions and Management Areas and the Special Interest and Research Natural Areas Map contained in the map packet). Table C 1 summarizes the RNA and SIA designations by alternative.

The following narratives describe the individual TNF potential Research Natural and Special Interest Areas, discuss their significant qualities, address current and potential uses, and examine the consequences of managing each area under alternative management prescriptions.

Management restrictions due to RNA, SIA, or NNL establishment will limit commodity production and some Forest uses in the area to varying degrees. These resource trade-offs are discussed below for each area to supplement Chapter 4, The Environmental Consequences. Designation or nondesignation as an SIA or RNA has no effect on some resources because of management practices which are common to all alternatives (refer to the EIS, Chapter 2, Management Direction Common to All Alternatives). Only those resources significantly affected are discussed in the Environmental Consequences sections. Acreages are only for the TNF; private acres are not shown.

TABLE C.1 - COMPARISON OF ALTERNATIVES BY PROPOSED RESEARCH NATURAL AREAS AND SPECIAL INTEREST AREAS

AREA	INVENTORIED ACRES	PRF	CUR	RPA	CMD	NMK	UNE
RESEARCH NATURAL AREAS							
1 Babbitt Peak (Washoe Pine)	1,061	YES	YES	YES	YES	YES	YES
2 Basin Peak (Studied)	60	NO	NO	NO	NO	YES	NO
3 Sugar Pine Point	625	YES	NO	NO	YES	YES	YES
4 Mt. Lola	498	NO	NO	NO	NO	YES	NO
5 Lyon Peak/Needle Lake	77	YES	NO	NO	NO	YES	YES
SUBTOTAL ACRES	2,944	2,386	1,061	1,061	1,686	2,944	2,386
SPECIAL INTEREST AREAS							
1 Placer County Big Tree Grove Botanical Area	346	YES	YES	YES	YES	YES	YES
2 Devils Postpile Geologic Area	69	YES	NO	NO	YES	YES	YES
3 Glacier Meadow Geologic Area	84	YES	NO	NO	YES	YES	YES
4 Grouse Falls Scenic Area	220	YES	NO	NO	YES	YES	YES
5. Hawley Lake Cultural Area	5,323	NO	NO	NO	NO	YES	NO
6. Meadow Lake Cultural Area	58	YES	NO	NO	YES	YES	YES
7. Boca Cultural Area	1,976	NO	NO	NO	NO	YES	NO
8 Kyburz Cultural Area	1,097	NO	NO	NO	NO	YES	NO
9 Sagehen Headwaters	79	YES	NO	NO	YES	YES	YES
10 Sierra Buttes	1,827	NO	NO	NO	NO	YES	NO
11 L Truckee River Terrace	468	NO	NO	NO	NO	YES	NO
12. Sagehen Creek Basin	8,373	NO	NO	NO	NO	YES	NO
13. Independence Lake	81	NO	NO	NO	NO	YES	NO
14 Headwaters N F American River	9,381	NO	NO	NO	NO	YES	NO
15 San Juan Ridge	6,541	NO	NO	NO	NO	YES	NO
16 Macklin Creek	380	NO	NO	NO	NO	YES	NO
17. Mason Fen	30	YES	NO	NO	YES	YES	YES
SUBTOTAL ACRES	36,333	886	346	346	886	36,333	886
GRAND TOTAL	39,277	3,272	1,407	1,407	2,572	39,277	3,272

Note Wild Plum was considered for SIA designation but eliminated because of current and past logging of the area

B. RESEARCH NATURAL AREA NARRATIVES

1. BABBITT PEAK (1,061 acres)

Because of the distinctive and unusual occurrence of Washoe pine and mature stands of mountain mahogany, this area has significant potential for research and ecological study. It is the only such area on the TNF and it is located in Sections 5, 6, 7, 8, 17, and 18, T.20N., R.12E., MDB&M.

Within Babbitt Peak are approximately 445 acres of white fir mixed with Jeffrey, western white, and Washoe pines. This area affords excellent opportunities to study the mixture's successional relationships and the successional relationship with Washoe pine. Also located here are about 225 acres of mountain mahogany. This species is unusual because of the large size of the individual plants (15 to 25 feet tall). A rare opportunity exists to study the relationship of this species to the site and to the coniferous species in this area.

I. ENVIRONMENTAL CONSEQUENCES OF RNA DESIGNATION

Management Prescription #5 (All Alternatives)

- a. Recreation - Recreation use would be discouraged and vehicles use prohibited to protect the area's natural ecosystem for research and ecological study. One potential recreation site would not be developed. Visual quality would remain unchanged. Risk to cultural resource would be low.
- b. Range - Livestock use would be permitted when needed to perpetuate the desired vegetative type in the RNA.
- c. Timber - Approximately 816 acres of commercial forest land and a maximum annual volume of 300 MBF would be unavailable for regulated timber harvest.
- d. Minerals - The area would be proposed for withdrawal from mineral entry; however, mineral potential is low.
- e. Lands - No encumbrances permitted except those for research of the RNA.
- f. Facilities - There would be no roads, trails, or trailheads constructed in this area.
- g. Protection, Including Pest Management - The effects on fire suppression and fuels management would be similar between alternatives. There would be limits on the type of suppression equipment that would be used or the amount of fuel treatment that would occur. Lack of access would hinder fire suppression. There would be no direct or indirect insect and disease control activities unless needed to maintain the vegetation type of the RNA. Adjacent areas could become susceptible to infestations spreading from the RNA.

II. ENVIRONMENTAL CONSEQUENCES OF NONRESEARCH NATURAL AREA DESIGNATION

Management Prescription #5 (All Alternatives)

All alternatives designate this area as an RNA,

2. BASIN PEAK (60 acres)

This proposed RNA candidate is located in Section 36, T.18N., R.14E., MDB&M, it consists of a nearly pure stand of mountain hemlock sixty acres in size. Few representative mountain hemlock stands have been identified in the Sierra Nevada. It is located with the former Castle Peak roadless area and adjacent to private land. The proposed RNA is currently within the Castle Peak motor vehicles closure area that is

restricted to dispersed nonmotorized recreation and grazing. No known timber harvesting or development is planned for the adjacent private land that would detract from the RNA potential of the area.

1. ENVIRONMENTAL CONSEQUENCES OF RNA DESIGNATION

Management Prescription #5 (Alternatives PRF and NMK).

- a. Recreation - Recreation **use** would be discouraged and vehicle **use** prohibited to protect the area's natural ecosystem for research and ecological study. Visual quality would remain unchanged. Risk to cultural resources would be low.
- b. Range - Livestock use would be permitted when needed to perpetuate the desired vegetation **type** in the RNA.
- c. Timber - The area is unsuited for regulated timber harvest.
- d. Minerals - The area would be withdrawn from mineral entry; however, the mineral potential **of** the area is low.
- e. Lands - No encumbrances would be permitted, except that pertaining to research of the RNA. Adjacent private lands would not adversely affect **the** proposed RNA since there are no known planned activities by the landowner.
- f. Facilities - There would be no roads, trails, or trailheads constructed in the area.
- g. Protection, Including Pest Management - **The** effects on suppression and fuels management would be similar between alternatives. There would be limits on the type of suppression equipment and the type of fuels treatment that could occur. Lack of access could hinder fire suppression. There would be no direct or indirect insect or disease control activities unless necessary to maintain the vegetation type **of** the RNA. Adjacent areas could become more susceptible to infestation spreading from the RNA.

II. ENVIRONMENTAL CONSEQUENCES OF NONRESEARCH NATURAL AREA DESIGNATION

Management Prescriptions #'s 1, 2, 3, 8, 13 (Alternatives CUR, RPA, CMD, and UNE)

- a. Recreation - Alternatives CUR, RPA, AND UNE would continue management of this area to maintain a near-natural setting. Nonmotorized recreation would be emphasized in these alternatives as well as Alternative CMD. Alternative UNE **would** permit motorized recreation in the area, which is compatible with the alternative theme.

Visual quality would remain high under Alternatives CUR, RPA, and UND. Some reduction in visual quality would occur in Alternative CMD **if** timber harvesting occurs.

Cultural resources would receive the best protection from project related impacts in Alternatives CUR, RPA, and UNE. Impacts to cultural resources could occur from management activities or increased numbers of visitors in Alternative CMD. Because of the nature of the area, it is not likely that these impacts would occur or be substantial.

- b. Range - Grazing would occur in Alternatives CUR, RPA, and UNE under extensive management. In Alternative CMD, both extensive and intensive grazing management would be implemented.
- c. Timber - Under Alternatives CUR, RPA, and UNE, the area would be unsuited for regulated timber production. Intensive timber management could occur under Alternative CMD, but these activities are unlikely.

- d. Water, Soils, and Air - Water quality and yield would not be affected in Alternatives CUR, RPA, and UNE. Some reduction in water quality could occur in Alternative CMD if timber harvesting or road building occurs. There would be no risk of soil loss in any of the alternatives because of the nature of the area. The effects on air quality would be similar in all alternatives. Short-term impacts could occur from dust from management activities or recreational activities in Alternative CMD. State Air Resource Board regulations, however, would still be met. No long-term impacts are foreseen.
- e. Facilities - There are no existing NFS roads or trails within the proposed area. There are some old motorized travelways, however, since the area is closed to motorized vehicles use these receive only occasional foot and equestrian use.
- f. Protection, Including Pest Management - There would be no change from the current situation in Alternatives CUR, RPA, and UNE. Access could improve in Alternative CMD if road construction occurs. This would aid identification and treatment of insect and disease problems. Fuels management would be primarily associated with the treatment of activity fuels created by timber harvesting and would fluctuate with the levels of harvest.
- g. Sensitive Plants - There would be no change from the current situation in Alternatives CUR, RPA, and UNE. The possibility of increased access and activities in Alternative CMD could increase risk of damage to sensitive plants.

3. SUGAR PINE POINT (625 acres)

The Sugar Pine Point area (Section 20, T.16N., R.13E., MDB&M) is an excellent RNA candidate. (1) The area represents a discrete unit of watershed; (2) Good examples of various stages of succession in a mixed conifer forest are present; (3) The area represents a zone of overlap of ponderosa pine and Jeffrey pine; (4) The amount of mature timber is slight, and access to the area is difficult because of the steep topography, so commercial timber production potential is minimal.

Studies of succession of brush to conifer forest are relatively few. Sugar Pine Point is an excellent place to study the dynamics of this successional pattern and the role of fire ecology in the mixed conifer forest. The comparative ecology of ponderosa pine and Jeffrey pine, both important commercial conifers, could also be studied. Both pine species occur with Jeffrey in the upper portions of Section 20 and ponderosa in the lower, with zones of overlap in between. Careful work could clarify the ecological requirements of these two species.

There is a possibility of scientific study of several rare plants that occur in the general area.

I. ENVIRONMENTAL CONSEQUENCES OF RNA DESIGNATION

Management Prescription #5 (Alternatives PRF, CMD, NMK, and UNE).

- a. Recreation use would be discouraged and vehicle use prohibited to protect the area's natural ecosystem for research and ecological study. Visual quality would remain unchanged. Risk to cultural resources would be low.
- b. Range - Livestock use would be permitted when needed to perpetuate the desired vegetation type on the RNA.
- c. Timber - Approximately 435 acres of commercial forest land and a maximum annual volume of 160 MBF would be unavailable for regulated timber harvest.
- d. Minerals - The area would be withdrawn from mineral entry, however, the mineral potential of the area is low.

- e. Lands - No encumbrances would be allowed except those for research of the RNA
- f. Facilities - There would be no roads, trails, or trailheads constructed into this area
- g. Protection, Including Pest Management - The effects on fire suppression and fuels management would be similar between alternatives. There would be limits on the type of suppression equipment that could be used and the amount of fuel treatment that would occur. Lack of access would hinder fire suppression. No direct or indirect insect or disease control activities would occur unless needed to maintain the vegetation type of the RNA. Adjacent areas could become more susceptible to infestations spreading from the RNA.

II. ENVIRONMENTAL CONSEQUENCES OF NONRESEARCH NATURAL AREA DESIGNATION

Management Prescription #'s 2, 3, 13, 15 (Alternatives CUR and RPA).

- a. Recreation - Recreation opportunities would range from dispersed nonmotorized activities (hiking, camping, hunting, etc) in Alternative RPA and portions of Alternative CUR to motorized recreation on designated routes in Alternative CUR. Steep terrain would limit accessibility. No potential developed recreation sites have been inventoried

The visual quality would remain high in Alternative RPA and portions of Alternative CUR, but would be reduced by intensive timber management activities in Alternative CUR (portion).

Impacts on cultural resources would be few in Alternative RPA and inventory would be limited. Expected impacts on and inventory of cultural resources would increase with the increase in management activities in Alternative CUR

- b. RNA Potential - The consequences of not designating the area as a Research Natural Area would be loss of research potential in a natural ecosystem, including a mixed conifer succession study area, a discrete unit of watershed, and a zone of overlap of ponderosa and Jeffrey pine.
- c. Range - Grazing would be permitted in Alternatives CUR and RPA by implementing extensive management
- d. Timber - Regulated timber production would not occur in Alternative RPA. Timber would be intensively managed in Alternative CUR, but would be limited by steep terrain and accessibility.
- e. Water, Soils, and Air - Alternative RPA would maintain high water yield and quality. Alternative CUR would result in some loss of water quality, but by using Best Management Practices the loss would be acceptable. Alternative RPA would have little impact on soils. Alternative CUR would result in a slight risk of loss of soil productivity from intensive timber management. The effects on air quality would be similar between alternatives. There would be short-term effects from dust or wood smoke because of road use by recreationists, timber harvesting, and prescribed burning; however, this short-term air pollution would still meet all State Air Resource Board regulations. At this time no significant long-term impacts are identified.
- f. Facilities - Some trailhead, trail, and low-standard road construction may occur in Alternative RPA. Limited road construction would occur (because of the steep terrain) to access the small amount of commercial timber in Alternative CUR. Economics would constrain the amount, if any, of facility development
- g. Protection, Including Pest Management - The effects on protection would be similar between alternatives. Fuels management would be primarily associated with the treatment

of activity fuels created by timber harvesting and would fluctuate with the levels of harvest. There would be no change in pest management from the current situation in Alternative RPA. Some improved accessibility would occur in Alternative CUR and would allow for greater protection against insects and disease.

- h Sensitive Plants - Increased access and activities could increase the risk of damage to sensitive plants

4. MT. LOLA (498 acres)

The proposed RNA, located in Section 12, T 18N, R.14E., MDB&M, contains a distinctive stand of mountain hemlock and represents a unique botanical area because the stands occupy 200-300 acres. Similar stands on the TNF rarely are larger than 40-50 acres. The large mountain hemlock stand is adjacent to private lands that are proposed for timber harvest and winter recreation development. Impacts from these planned activities would strongly detract from the research values on TNF land

I. ENVIRONMENTAL CONSEQUENCES OF RNA DESIGNATION

Management Prescription #5 (Alternative NMK).

- a. Recreation use, including ski area development, would be discouraged and vehicles use prohibited to protect the area's natural ecosystem for research and ecological study. Visual quality would remain unchanged. Risk to cultural resources would be low.
- b. Timber - Approximately 492 acres of commercial forest land and a maximum annual volume of 280 MBF would be unavailable for regulated timber harvest.
- c. Minerals - The area would be withdrawn from mineral entry; however, the mineral potential of the area is low.
- d. Lands - No encumbrances would be allowed except those for research of the RNA
- e. Facilities - There would be no roads, trails, or trailheads constructed into this area.
- f. Protection, Including Pest Management - There would be limits on the type of suppression equipment that could be used and the amount of fuel treatment that would occur. Lack of access would hinder fire suppression. There would be no direct or indirect insect or disease control activities unless needed to maintain the vegetation type of the RNA. Adjacent areas could become more susceptible to infestations spreading from the RNA.

II. NONRESEARCH NATURAL AREA DESIGNATION CONSEQUENCES

Management Prescription #'s 2, 3, 11, and 13 (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a. Recreation - Alternatives PRF and UNE would manage the area for its downhill skiing potential. Alternative CUR would emphasize dispersed motorized recreation. Both motorized and nonmotorized recreation activities would occur in Alternatives RPA and CMD.

Visual quality would be reduced in the alternatives because of timber harvesting or if downhill ski development were to occur. Impacts to cultural resources may increase in Alternatives CMD and UNE because of greater access and project activities.
- b. RNA Potential - The consequences of nondesignation of the area as an RNA would be loss of a unique botanical area in all alternatives.

- c. Timber - Regulated timber production would occur in Alternatives CUR, RPA, and CMD. Timber production would be unregulated in Alternatives PRF and UNE
- d. Water, Soils, and Air - Water yield and quality would have some reductions in quality in the remaining Alternatives PRF, CUR, RPA, and UNE because of timber harvest or if ski development were to occur. Alternatives PRF, CUR, RPA, CMD, and UNE would result in some risk of soil loss. Short-term reductions in air quality could occur in all alternatives, however, State Air Resource Board requirements would still be met.
- e. Facilities - Road construction would occur in all alternatives
- f. Protection, Including Pest Management - Improved access would aid fire suppression and treatment of insect and disease problems. Fuels management would primarily treat activity fuels associated with timber harvest and recreation development
- g. Sensitive Plants - Increased access in all alternatives could raise the risk of damage to Sensitive plants.

5. LYON PEAWNEEDLE LAKE (700 acres)

The proposed RNA is located immediately north of the northern boundary of Granite Chief Wilderness in Sections 22, 27, 28, and 34, T.16N., R 15E., MDB&M. The area is an excellent candidate to represent the mountain hemlock target element. The elevation varies from approximately 7200 feet to 8900 feet. There is *limited* public access to this area because it is 'land-locked' to the north by **the** private lands. There is some limited access on unimproved Forest Service trails to the east and access could occur from Granite Chief, Needle Lake, and Lyon Peak along the top of the ridge

There is a possibility of scientific *study* of several rare plants that occur in the general area.

I. ENVIRONMENTAL CONSEQUENCES OF RNA DESIGNATION

Management Prescription #5 (Alternatives PRF, NMK, and UNE)

- a. Recreation - Recreation **use** would be discouraged and vehicle **use** prohibited to protect the area's natural ecosystem for research and ecological study. Visual quality would remain unchanged. Because access would be limited, risk to cultural resources would be low.
- b. Range - Livestock **use** would be permitted when needed to perpetuate the desired vegetation type in the RNA
- c. Timber - The area is unsuited for regulated timber harvest.
- d. Minerals - The area would be withdrawn from mineral entry, however, the mineral potential of this area is low.
- e. Lands - No encumbrances would be permitted, except that pertaining to research of the RNA. Adjacent private lands would not adversely affect the proposed RNA because this land has been included in the University of California's NLWRS, which is compatible with RNA status
- f. Facilities - There would be no roads, trails, or trailheads constructed in the area.
- g. Protection, Including Pest Management - The effects on suppression and fuels management would be similar between alternatives. There would be limits on the type of suppression equipment and the type of fuels treatment that could be used. Lack of access could hinder fire suppression. There would be no direct or indirect insect or

disease control activities unless necessary to maintain the vegetation type of the RNA. Adjacent areas could become more susceptible to infestation spreading from the RNA.

II. ENVIRONMENTAL CONSEQUENCES OF NONRESEARCH NATURAL AREA DESIGNATION

Management Prescription #'s 1, 2, 3, 8, or 13 (Alternatives CUR, RPA, and CMD).

- a. Recreation - Alternatives CUR and RPA would continue management of this area to maintain a near-natural setting. Nonmotorized recreation would be emphasized in these alternatives.

Visual quality would remain high under Alternatives CUR and RPA. Some reduction in visual quality would occur in Alternative CMD if timber harvesting occurs.

Cultural resources would receive the best protection from project-related impacts in Alternatives CUR and RPA. Impacts to cultural resources could occur from management activities or increased numbers of visitors in Alternative CMD. Because of the nature of the area, it is not likely that these impacts would occur or be substantial.

- b. Range - Grazing would occur in Alternatives CUR and RPA under extensive management. In Alternative CMD both extensive and intensive grazing management would be implemented.
- c. Timber - Under Alternatives CUR and RPA the area would be unsuited for regulated timber production. Intensive timber management could occur under Alternative CMD, but these activities are also unlikely.
- d. Water, Soils, and Air - Water quality and yield would not be affected in Alternatives CUR and RPA. Some reduction in water quality could occur in Alternative CMD if timber harvesting or road building occurs. There would be no risk of soil loss in any of the alternatives because of the nature of the area. The effects on air quality would be similar in all alternatives. Short-term impacts could occur from dust from management activities or recreational activities in Alternative CMD. State Air Resource Board regulations, however, would still be met. No long-term impacts are foreseen.
- e. Facilities - There are no existing NFS roads or trails within the proposed area. The only physical improvements are an unimproved trail and a packer/hunter camp. This area only receives occasional foot and equestrian use.
- f. Protection, Including Pest Management - There would be no change from the current situation in Alternatives CUR and RPA. Access could improve in Alternative CMD if road construction occurs. This would aid identification and treatment of insect and disease problems. Fuels management would be primarily associated with the treatment of activity fuels created by timber harvesting and would fluctuate with the levels of harvest.
- g. Sensitive Plants - There would be no change from the current situation in Alternative CUR and RPA. The possibility of increased access and activities in Alternative CMD could increase risk of damage to sensitive plants.

C. SPECIAL INTEREST AREA NARRATIVES

1. PLACER COUNTY BIG TREE GROVE BOTANICAL AREA (346 acres)

This locally popular and well-known attraction of the Sierra Nevada is located in all or part of Sections 18 and 19, T.14N, R.13E., MDB&M. The significance of the grove lies in its location, the northernmost grove of giant sequoia, and in its plant associations, which are considered unique. The grove has been studied

by botanists since the 19th century. Public interpretive facilities exist at the site, and there is heavy use both by individuals and institutions. Establishment of this area as an SIA has been recommended for the past 20 years.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (All Alternatives)

- a. Recreation - Current management direction would continue at the site in all alternatives. Recreation opportunities would include botanical interpretation, hiking, and picnicking. Additional facilities may be developed to foster public appreciation of the grove. Visual quality would remain high from all major viewing points. Cultural resources would be inventoried and could be interpreted as part of the overall management theme of the grove.
- b. Timber - Approximately 346 acres of commercial timber land are capable of contributing a maximum of 130 MBF per year to the allowable sale quantity. This commodity production would be forgone.
- c. Facilities - Trails and trailheads would be permitted to facilitate the public use of the area.
- d. Minerals - The area would be withdrawn from mineral entry; however, the mineral potential of the area is low.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

All alternatives designate this area as an SIA; thus, there is no discussion of the consequences of non-designation.

2. DEVILS POSTPILE GEOLOGIC AREA (69 acres)

This type of prominent geologic feature occurs in a number of locations in California. The feature found on the Downieville Ranger District (all or part of Sections 17, 20, 21, T.21N, R.10E, MDB&M) is the most outstanding example found on the TNF. Its prominence in the landscape is accentuated by its location on the edge of a rugged canyon. As a geologic phenomenon it is not unique, and its location in a remote and poorly accessed area of the Forest limits its potential as an SIA. Visitor use and enjoyment of the area is likely to remain at a low level.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternatives PRF, NMK, and UNE).

- a. Recreation - Both dispersed and developed recreation opportunities and interpretive facilities may be provided to facilitate public appreciation of the geologic phenomenon. Nonmotorized opportunities would be emphasized in Alternative NMK. Visual quality would be maintained except for alterations caused by trail and interpretive facility development. Cultural resources would be inventoried and protected from project impacts.
- b. Water, Soil, and Air - Water quality may be reduced slightly, and some loss of soil productivity may occur from facility development. Short-term reduction in air quality may occur but State Air Resources Board requirements would still be met.
- c. Minerals - The area would be proposed for withdrawal from mineral entry, however, the mineral potential is low.

- d. Facilities - Roads, trails, and trailheads would be permitted to facilitate public use.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 7, 13, and 15 (Alternatives CUR, RPA, and CMD)

Because of the nature of the area and its location, there would be no consequences from not designating the area as an SIA, except the area would be open to mineral entry (low mineral potential), and public interpretation would not be emphasized

3. GLACIER MEADOW GEOLOGIC AREA (84 acres)

This area near Donner Summit Rest Stop (located in Section 8, T.17N, R.15E., MDB&M) represents an excellent example of a landscape shaped by glacial action. Glaciers scoured large portions of the Sierra Nevada over 10,000 years ago. In the Donner Summit area the advancing glaciers ground down and polished the granite rocks and carried rock and debris with them as the ice advanced. When the glaciers finally melted, this rock and debris were deposited on the landscape. At Glacier Meadow this process is apparent. Large boulders left by the retreating glaciers now rest on the smoothly polished granite bedrock. Although there are similar examples scattered throughout the Sierra, Glacier Meadow is the most obvious example of this natural phenomenon on the TNF. It is also situated near heavily traveled Interstate 80, so there is potential for heavy recreation visitor use if facilities and access were provided.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternatives PRF, NMK, CMD, and UNE)

- a. Recreation - Both dispersed nonmotorized and motorized recreation opportunities and interpretive facilities would be permitted within the SIA to facilitate public appreciation and the study of geologic phenomenon. Nonmotorized recreation opportunities would be emphasized in Alternative NMK. Visual quality would be maintained except for alterations in the landscape caused from trail and interpretive facility development. Cultural resources would be inventoried and protected from project impacts.
- b. Timber - Commercial timber land is insignificant in this area.
- c. Minerals - This area would be proposed for withdrawal from mineral entry; however, the mineral potential is low.
- d. Water, Soil, and Air - Water quality may be reduced slightly and some loss of soil productivity may occur from road and facility development. Short-term reductions in air quality may occur, but State Air Resources Board requirements will be met.
- e. Facilities - Roads, trails, and trailheads would be permitted to facilitate public use of the area.
- f. Sensitive Plants - Encouraging public use of the area may increase risk of damage to sensitive plants.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 8 and 15 (Alternatives CUR and RPA).

- a. Recreation - Alternatives CUR and RPA would permit both dispersed nonmotorized and motorized recreation. Interpretive facilities would be compatible with the visual quality themes of these alternatives. Visual quality would be reduced slightly in this area if the maximum annual volume of 25 MBF is harvested. Cultural resources would be inventoried and protected in all non-SIA alternatives.

- b. SIA Values - Because of the nature of the area, nondesignation would not affect the SIA values; however, interpretation of the geologic phenomenon would not be emphasized.
- c. Timber - Regulated timber harvest would be permitted in all non-SIA alternatives. The area would contribute a maximum annual volume of **25** MBF to allowable harvest
- d. Minerals - The area would be open to mineral entry; however, there is low mineral potential
- e. Facilities - Same as SIA designation
- f. Water, Soil, and Air - Water quality may be reduced slightly and some **loss** of soil productivity may occur from road construction and timber harvest. Short-term impacts on air quality may also occur, but State Air Resources Board requirements would still be met

4. GROUSE FALLS SCENIC AREA (220 Acres)

Grouse Falls is one of the highest cascading falls in California. It is located in rugged country on the Foresthill Ranger District (Section 3, T.14N., R.12E., MDB&M), which enhances its scenic quality. The falls are accessed by a primitive trail. Because of the poor condition of the trail, visitor **use** is light

I ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternatives PRF, CMD, NMK, and UNE)

- a. Recreation - Dispersed, developed, interpretive, and motorized recreational opportunities could be available within the SIA to aid public appreciation and **use** of the Grouse Falls scenic area. Nonmotorized recreation opportunities would be emphasized in limited timber harvesting in and surrounding the SIA. Cultural resources would be inventoried and, **if** appropriate, may be included in an interpretive program
- b. Timber - Approximately 186 acres of commercial forest land are capable of contributing a maximum of **68** MBF per year to the allowable sale quantity. Visual and recreation constraints on harvesting practices within the SIA would **limit** the volume harvested.
- c. Water, Soils, and Air - Some **loss** of soil productivity and quality could result from trail and facility development. Short-term reductions in air quality may occur, but State Air Resources Board requirements would be met.
- d. Minerals - The area has a moderate potential for mineral commodity production, and it would be proposed for withdrawal from mineral entry
- e. Facilities - Trails and trailheads would be permitted to facilitate public **use** of the area.
- f. Sensitive Plants - Increased access and visitor use could increase the risk of impact on sensitive plants.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 7 and 13 (Alternatives CUR and RPA).

- a. Recreation - Alternative RPA would increase motorized recreation opportunities, permitting **but** not emphasizing dispersed nonmotorized recreation in the first decade. Visual quality would be reduced as a result of timber management in Alternative RPA. Visual quality would remain high in Alternative CUR during the first decade. Impacts on

potential cultural resources could be high, and an inventory would be conducted as a result of management activities in Alternatives CUR and RPA

- b. SIA Values - In Alternatives CUR and RPA, the area would be managed for intensive timber production, and a unique interpretive opportunity would not be developed
- c. Timber - Alternatives CUR and RPA would permit regulated timber harvest. The maximum annual volume of 68 MMBF could be removed and contributed to the allowable sale quantity
- d. Water, Soils, and Air - Some reduction in water quality and loss of soil productivity may occur due to facility and road construction, and timber harvest. Short-term reduction in air quality may occur, but State Air Resources Board requirements would still be met
- e. Minerals - The area would be open to mineral entry. A moderate mineral potential exists in the area.
- f. Facilities - Alternatives CUR and RPA would develop and maintain a transportation network necessary to facilitate timber harvest and other activities.
- g. Protection - Improved access would facilitate treatment of insect and disease problems. Fuels management would be primarily associated with the treatment of activity fuels created by timber harvest and would fluctuate with harvest levels.
- h. Sensitive Plants - Improved access could increase the risk of damage to sensitive plants.

5. HAWLEY LAKE CULTURAL AREA (5,323 acres)

This proposed SIA is located all or partially in Sections 3, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 34, and 35, T 21N, R 11E., and Section 3, T.20N., R 11E., MDB&M. It is a high elevation area which contains numerous sites representing prehistoric and historic use spanning the past several thousand years. Several of the major sites have potential for public interpretation, and others have potential for scientific study. The area is unusual in that such a high elevation area appears to have received so much prehistoric use. Available information indicates that the territories of three Indian groups (Nisenan, Northeastern Maidu, and Washoe) converged in the Hawley Lake area. One of the prehistoric sites is the most outstanding of its type found in the Sierra Nevada. The attractiveness of the area as an SIA is limited by lack of easy access and remoteness from high recreation use areas.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternative NMK).

- a. Recreation - Both dispersed nonmotorized and motorized recreation opportunities and interpretive facilities may be provided with the SIA to facilitate public enjoyment and study of the cultural resources. Nonmotorized opportunities would be emphasized in Alternative NMK. Visual quality would be enhanced since development and timber harvesting would be limited. Cultural resources would be emphasized, permitting interpretation and protection of cultural resources for public enjoyment.
- b. Timber - Approximately 2,746 acres of commercial forest land are capable of contributing a maximum of 1 MMBF per year to the allowable sale quantity. Visual and recreation constraints on harvesting practices would limit this volume considerably.
- c. Water, Soils, and Air - Water quality may be reduced slightly as a result of road and facility development. The effects on air quality would be limited because these short-term impacts would meet all State Air Resource Board regulations. At this time no significant long-term impacts are identified.

- d. Minerals - This area would be proposed for withdrawal from mineral entry, which would significantly affect potential mineral commodity production. The area is highly mineralized and produced significant amounts of gold and other minerals in the late 1800's and early 1900's. There is one mine in the area that has had recent exploration work and may be operating in the future
- e. Facilities - Roads, trails, and trailheads would be permitted to facilitate public use of the area and for limited timber harvesting
- f. Protection, Including Pest Management - Improved access to the area would provide better protection from insects and disease. The effects on protection would be similar between alternatives. The fire suppression emphasis would be directly related to the land and resource management goals and objectives.
- g. Sensitive Plants - Encouraging public use of the area could increase risk of damage to sensitive plants.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 2, 3, 7, 8, 13, or 15 (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a. Recreation - Alternative RPA would permit only dispersed nonmotorized recreation in the area. Dispersed motorized recreation would be emphasized in Alternatives PRF and UNE. An increase in motorized recreation opportunities would be expected in Alternative CMD as a result of intensive timber management. Visual quality would remain high in Alternatives PRF, RPA, and UNE. Visual quality would be reduced in Alternatives CUR, and CMD because of their timber harvest. Impacts on and inventory of cultural resources would increase in Alternatives PRF, CUR, CMD, and UNE as a result of public use and management activities.
- b. SIA Values - The cultural values would receive protection from management activities but would have increased access in Alternatives PRF, CUR, CMD, and UNE. Nondesignation of the area would not preclude public interpretation of the cultural values
- c. Timber - Regulated timber harvest would occur subject to visual and recreation constraints in Alternatives PRF and UNE. Under intensive timber management in Alternative CMD, the maximum annual volume of 1.0 MMBF could be harvested from the area
- d. Water, Soils, and Air - Water quality would be reduced slightly in Alternatives PRF, RPA, and UNE. Water quality would be reduced further in Alternative CMD because of timber harvesting. Best Management Practices would be used to minimize reductions in water quality. Some loss of soil production may result from road and facility development and timber harvest in Alternative PRF, RPA, and UNE. Alternative CMD would result in a higher loss of soil productivity from timber harvesting. Short-term impacts of dust or wood smoke due to road use from recreationists, timber harvesting, and prescribed burning would occur, however, these short-term impacts would meet all State Air Resources Board regulations
- e. Minerals - Mineral entry would be permitted. The area is highly mineralized and has significant potential for mineral commodity production.
- f. Facilities - Same as in SIA designation for all alternatives, except Alternatives PRF, CMD, and UNE would permit development and maintenance of a transportation network necessary to facilitate timber harvest and other activities.

- g Protection, Including Pest Management - Improved access would provide better protection from insect and disease problems. Fuels management would be directly related to timber harvest and would fluctuate with harvest levels
- h. Sensitive Plants - Increased access and activities could increase the risk of damage to sensitive plants.

6. MEADOW LAKE CULTURAL AREA (58 acres)

Both historic and prehistoric sites occur within the area (located in all or part of Sections 22 and 27, T.18N, R.13E., MDB&M). The history of the area, primarily mining surrounding Meadow Lake, has the greatest potential for public interpretation, education, and enjoyment. The prehistoric resources have greater scientific than interpretive value. The area is fairly remote and access is difficult, which limits its interpretive potential and favors preservation of the scientific values.

I ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternatives PRF, CMD, NMK, and UNE)

- a. Recreation - Both dispersed and developed recreational opportunities and interpretive facilities may be provided to facilitate public enjoyment and study of cultural resources. Nonmotorized opportunities would be emphasized in Alternative NMK. Visual quality would be reduced slightly by interpretive development.
- b. Timber - Because of low timber productivity, little timber value would be lost due to SIA designation.
- c. Water, Soils, and Air - Water quality may be reduced slightly as a result of road and facility development. Some loss of soil productivity may also result. Short-term impacts on air quality may occur from facility development and recreation use, but State Air Resources Board requirements would be met.
- d. Minerals - Meadow Lake would be proposed for withdrawal from mineral entry. The area has historically produced minerals and is considered to have high mineral potential. Designation as an SIA would result in a loss of potential mineral commodity production in the area.
- e. Facilities - Roads, trails and trailheads would be permitted to facilitate public use and for limited timber harvest.
- f. Sensitive Plants - Encouraging public use of the area could increase risk of damage to sensitive plants

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 4, 7, 8, 13, and 15 (Alternatives CUR and RPA).

- a. Recreation - Alternative CUR would permit water-oriented recreation development. Alternative RPA would provide greater opportunities for motorized recreation because of timber harvest. Visual quality would be reduced as a result of timber harvest in Alternative RPA. Background visual quality would be maintained for recreation users in Alternative CUR. Cultural resources would be inventoried in all non-SIA alternatives.
- b. SIA Values - Alternative CUR would not emphasize cultural resource interpretation. Alternative RPA would permit cultural resource interpretation. Cultural resources would be protected from project activities in all alternatives

- c Timber - Regulated timber harvest would be permitted in all non-SIA alternatives. The area would only contribute a maximum annual volume of 18 MBF to the allowable sale quantity.
- d Water, Soils, and Air - Same as with SIA designation
- e Minerals - The area would be open to mineral entry. Meadow Lake has high mineral potential.
- f Facilities - Same as SIA designation, except Alternatives CUR, and RPA would develop a transportation network necessary to harvest timber or to facilitate water-oriented recreation.

7. BOCA CULTURAL AREA (1,976 acres)

This area coincides with an area of high recreation use located adjacent to Interstate 80 (all or part of Sections 8, 9, 10, 15, and 16, T.18N., R.17E., MDB&M). The cultural attributes have been described in Chapter 3 and represent a variety of themes that characterize the history and prehistory of this area of the Sierra Nevada. Lumbering, mining, ice production, and transcontinental railroad history may be interpreted for the public in conjunction with recreation facilities and activities. The incorporation of interpretive facilities into the master plan for recreation development of the Boca Area would be consistent with SIA designation

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternative NMK).

- a Recreation - Both dispersed and developed recreation opportunities and interpretive facilities may be provided within the SIA for public enjoyment and study of cultural resources. Nonmotorized opportunities would be emphasized in Alternative NMK. Visual quality would be reduced slightly because limited development may occur. Cultural resources would be emphasized, permitting interpretation and protection for public enjoyment.
- b Timber - Approximately 642 acres of commercial forest land are capable of contributing a maximum of 200 MBF per year to the allowable sale quantity. Since the timber potential is not significant, timber harvesting would be unregulated and recreation and visual constraints would make only salvage harvesting appropriate
- c Water, Soils, and Air - Water quality may be reduced slightly because of road and facility development. Some loss of soil productivity may also result. Short-term impacts on air quality may result from road dust and wood smoke from recreational use. State Air Resource Board regulations for air quality would be met. No long-term impacts are identified.
- d Minerals - The area would be proposed for withdrawal from mineral entry; however, it is low in mineral potential.
- e Facilities - Roads, trails, and trailheads would be permitted to facilitate public use of the area.
- f Protection, Including Pest Management - Improved access to the area would provide better protection from insects and disease. Fuels management would be primarily associated with the treatment of activity fuels created by timber harvesting and would fluctuate with levels of harvest.

- g Sensitive Plants - Encouraging public use of the area could increase risk of damage to sensitive plants.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 3, 4, 7, 13 or 15 (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a Recreation- All alternatives would allow for water-oriented recreation development and some interpretive facilities. Alternative CUR would also emphasize motorized recreation in a portion of the SIA. Alternative CMD would provide more motorized recreation opportunities because of intensive timber management. Visual quality would be slightly reduced in Alternatives PRF, CUR, RPA, and UNE because of water-oriented recreation development and some timber management. Visual quality would be further reduced in Alternative CMD because of intensive timber management. Cultural resource inventory would increase with the increase in management activities.
- b SIA Values - In all alternatives, a non-SIA designation would not alter the interpretive use of the area significantly. Developments would emphasize water-oriented activities over interpretive cultural facilities, but some interpretive facilities would probably still be developed. Alternative CMD would allow intensive timber management, but there is little commercial timber land. Harvesting activities could be accomplished while protecting the cultural significance of the area.
- c Timber - Timber would be harvested on a regulated basis. Alternatives PRF, CUR, RPA, and UNE would constrain harvesting practices to a manner compatible with visual and recreation objectives. Under intensive timber management in Alternative CMD, the maximum annual volume of 200 MBF could be harvested.
- d Water, Soils, and Air - Water quality would be reduced in Alternatives PRF, CUR, RPA, and UNE because of water-oriented recreation development and use and some timber management. Water quality would be further reduced in Alternative CMD because of intensive timber management. **Best** Management Practices would be used to minimize reductions in water quality in all alternatives. Air quality and soils consequences would be the same as under SIA designation.
- e. Facilities- In Alternatives PRF, CUR, RPA, and UNE, roads and trails would be built to facilitate water oriented recreation. Alternative CMD would permit development and maintenance of a transportation network necessary to facilitate timber harvest and other activities.
- f. Protection- Improved access would provide better protection from insect and disease problems. Fuels management would be directly related to timber harvest and would fluctuate with harvest levels.
- g. Sensitive Plants - Increased access and activities could increase the risk of damage to sensitive plants.

8. KYBURZ CULTURAL AREA (1,097 acres)

As with the Hawley Lake area, there is a high density of historic and prehistoric sites in the area (located in all or part of Sections 1 and 12, T 19N., R. 15E., and Sections 5, 6, 7, 8, 17, and 18, T. 19N., R. 16E., MDB&M). The historic Henness Pass Road passes through the area. The large marsh within the area, which attracts large numbers of waterfowl, was the focus of prehistoric occupation. The most intensive prehistoric use occurred 2,000 to 4,000 years ago during a period of cooler, moister climate.

Establishing this area as an SIA would complement the ongoing program of wildlife habitat improvement and public interpretation of Forest Service management activities. The proximity of the area to Highway

89 and developed recreation sites would make this a potential high use area and create an excellent opportunity to provide for public use, enjoyment, and understanding of forest resources and Forest Service management.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternative NMK).

- a. Recreation - Both dispersed motorized and nonmotorized recreation opportunities and interpretive facilities may be provided to facilitate public enjoyment and study of the cultural resources. Alternative NMK would emphasize nonmotorized opportunities. Visual quality would be reduced slightly because of limited development.
- b. Timber - Approximately 723 acres of commercial forest land are capable of contributing a maximum of 300 MBF per year to the allowable sale quantity. Timber harvesting would be unregulated, and recreation and visual constraints would make only sanitation and salvage harvesting appropriate.
- c. Water, Soils, and Air - Water quality may be reduced slightly because of road and facility development. Some loss of soil productivity may also occur because of such activities. The effects on air quality would be from dust or wood smoke because of road use. State Air Resource Board regulations governing air quality would still be met. There are no significant long-term impacts identified.
- d. Minerals - The area would be proposed for withdrawal from mineral entry; however, mineral potential is low.
- e. Facilities - Roads, trails, and trailheads would be constructed to facilitate public use of the area and for limited timber harvest.
- f. Sensitive Plants - Increased access and public use could increase the risk of damage to sensitive plants.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #7, 13, or 15 (Alternatives PRF, CUR, CMD, and UNE)

- a. Recreation - In Alternatives PRF, CUR, CMD, and UNE, recreation opportunities would be similar to the cultural interpretive opportunities under SIA designation, but developments would be restricted to those that complement, or do not interfere with deer and waterfowl habitats. Alternatives RPA and CMD would result in intensive management of the area for timber production, thereby increasing motorized recreation opportunities. Visual quality would be reduced slightly in Alternatives PRF, CUR, and UNE because some development and timber harvesting would occur. Visual quality would be reduced further in Alternatives RPA and CMD because of intensive timber management. Inventory of cultural resources would occur in all alternatives.
- b. SIA Values - Alternatives RPA and CMD would be the least compatible with the ongoing program for public interpretation of wildlife habitat improvement projects and Forest management activities. Timber harvesting would be emphasized and could raise the risk to cultural resources and limit opportunities for public interpretation.
- c. Fish and Wildlife - Deer and waterfowl habitat would be protected and improved in Alternatives PRF, CUR, CMD, and UNE. Significant habitat would be protected in Alternative RPA.

- d. Timber - Timber would be harvested on a regulated basis in all alternatives. Alternatives PRF, CUR, and UNE emphasize harvesting timber to achieve wildlife objectives for the area.
- e. Water and Soils - Water quality would be maintained or improved because of wildlife habitat improvement projects in Alternatives PRF, CUR, and UNE. Water quality would be reduced because of intensive timber management in Alternatives RPA and CMD. Best Management Practices would minimize reductions in water quality. Some loss of soil productivity would result from road and facility development and timber harvest.
- f. Facilities - In Alternatives PRF, CUR, and UNE transportation facilities would be restricted to meet wildlife objectives. Alternatives RPA and CMD would permit development and maintenance of a transportation network necessary to facilitate timber harvest and other activities.
- g. Protection, Including Pest Management - Improved access would provide better protection against insect and disease problems. Fuels management would be directly related to timber harvest and would fluctuate with different harvest levels.
- h. Sensitive Plants - Increased access and activities could increase the risk of damage to sensitive plants.

9. SAGEHEN HEADWATERS (79 acres)

Located in a glacial cirque basin comprising the headwaters of Sagehen Creek (Section 16, T.18N., R.15E., MDB&M), the Sagehen Botanical Area is an excellent example of virgin red fir, mountain hemlock, and mountain mahogany communities in an 'avalanche' forest. The cirque basin is filled by an ephemeral pond containing a wide variety of aquatic invertebrates. One hundred thirty species of plants have been found in this area, including a species of lichen known only in this location in the Sierra Nevada. Because of the area's botanical uniqueness and undisturbed ecosystem, a significant opportunity exists for research. Pending further analysis, a decision on the allocation of this area will be delayed.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternatives PRF, CMD, NMK, and UNE).

- a. Recreation - Opportunities for dispersed recreation would only occur and be encouraged if public use did not affect SIA values. The ecosystem is quite fragile and will not support heavy use. Visual quality would be maintained and cultural resources would be protected.
- b. Timber - Commercial timber land is insignificant in this area.
- c. Minerals - The area would be proposed for withdrawal; however, the mineral potential is low.
- d. Facilities - Roads, trails, and trailheads would be permitted if compatible with the purpose of the SIA.
- e. Sensitive Plants - Designation would provide added protection of sensitive plants. If public use is encouraged, however, increasing use could raise the risk of damage to plants.

II. CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescriptions #'s 3, 5, 13, and 14 (Alternatives CUR and RPA)

- a. Recreation- In Alternative RPA dispersed nonmotorized recreation would be emphasized. Dispersed motorized recreation would occur in Alternative CUR. Visual quality would be maintained in all alternatives. Cultural resources would be inventoried and protected as needed.
- b. SIA Values - Alternatives CUR and RPA would maintain the ecological values found in the area.
- c. Timber - Regulated timber management would occur in Alternatives CUR and RPA, but would be subject to visual and recreation constraints.
- d. Water, Soil, and Air - Some reduction in water quality and loss of soil productivity could occur from intensive timber management, but Best Management Practices would be used to minimize effects. Short-term reduction in air quality may occur, but State Air Resources Board requirements would still be met.
- e. Minerals - The area would be open to mineral entry; however, the mineral potential is low.
- f. Facilities - Trails and roads necessary for research and timber harvest would be permitted.
- g. Sensitive Plants - Some impact on sensitive plant habitat could occur from timber harvest activities in alternatives CUR, RPA, and CMD.

10. SIERRA BUTTES (1,827 acres)

The major theme of this area (all or part of Sections 4, 5, 8, 9, 16, 20, and 21, T.20N, R.12E, MDB&M) is a special interest species. In a calcareous vein in the metavolcanic cliffs on the east side of the Buttes is the southernmost occurrence of green spleenwort (*Asplenium viride*). This species normally occurs in Central Washington and Oregon. Also in the Sierra Buttes area is mountain hemlock (*Tsuga mertensiana*). The purpose of SIA establishment is to preserve the green spleenwort.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternative NMK)

- a. Recreation - Opportunities for dispersed and motorized recreation and interpretive development would be permitted, thereby aiding public appreciation of the special interest plant species. Visual quality would be reduced slightly because of interpretive development. Cultural resources would be inventoried as necessary.
- b. Timber - approximately 586 acres of commercial forest land are capable of producing a maximum of 200 MBF per year. Timber harvesting would be unregulated, and recreation and visual constraints would make only sanitation and salvage harvesting appropriate.
- c. Minerals - This area would be proposed for withdrawal from mineral entry. Mineral potential is high. Some loss of mineral commodity production could occur as a result of withdrawal.
- d. Lands - Designation of the area as an SIA would be difficult since approximately one-third of the area is in private ownership. The area has potential for hydroelectric developments. One such area is planned for Upper Sardine Lake.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 2, 3, 4, 8, 13, or 15 (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a. Recreation - Opportunities would be similar to the current situation. Dispersed and motorized recreation would continue. Motorized recreation opportunities would increase because of timber harvesting in Alternatives PRF, CUR, RPA (portion), CMD, and UNE, with the greatest increase being in Alternative CMD. Dispersed motorized recreation would be emphasized in Alternatives PRF and UNE. Water-oriented recreation opportunities would be permitted in Alternative CUR. Visual quality would be reduced because of intensive timber management in Alternatives RPA and CMD. Visual and recreation constraints on management would minimize visual quality reduction in Alternatives PRF, CUR, and UNE. Cultural resources would be inventoried as necessary in all alternatives.
- b. SIA Values - The consequences of not designating the area as an SIA would not be significant because the green spleenwort is located on a cliff where it is unlikely to be disturbed by TNF management activities.
- c. Timber - Alternative CMD would permit the maximum annual volume of 200 MBF to be harvested. Alternatives PRF, CUR, RPA, and UNE would allow timber harvest, with visual and recreation constraints reducing the maximum annual volume.
- d. Water, Soils, and Air - Water and air quality would be reduced slightly in all Alternatives because of limited timber harvesting and water-oriented recreation development. All impacts would be minimized using Best Management Practices. All alternatives would result in a slight risk of loss of soil productivity from limited timber harvesting and from water-oriented recreation development and activities.
- e. Minerals - The area would be open to mineral entry, permitting mineral commodity production.
- f. Facilities - Alternatives PRF and UNE would develop trails and trailheads, some interpretive facilities, and roads for timber harvest. Alternative CUR would allow development of facilities necessary for water-oriented recreation development. Alternatives RPA (portion) and CMD would develop a transportation network necessary to facilitate timber harvest and other activities.
- g. Sensitive Plants - Increased access and activities could increase the risk of damage to sensitive plants.

11. LITTLE TRUCKEE RIVER TERRACE (468 acres)

This site is on geologic terraces formed by glacial dam-burst floods coming from Lake Tahoe (located in all or part of Sections 4 and 9, T.18N., R.12E., and Sections 32 and 33, T.19N., R.17E., MDB&M). The soils are scientific standard reference soils used to calibrate degrees of soil development over geologic time. The area represents a unique setting for the study of plants peculiar to the sagebrush community. The dominant plant is *Artemisia tridentata*. There is a fine collection of sagebrush-associated plants which occur in succession during the spring and summer. Yellow Bells (*Fritillaria pudica*), common to the north, apparently reach their southernmost distribution here. Sagebrush vegetation in California has not been well studied or described.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternative NMK).

- a. Recreation - Opportunities for dispersed and motorized recreation and interpretive development would be permitted to facilitate public appreciation and study of the geologic terraces and sagebrush communities unique to the area. Visual quality would be reduced slightly because of interpretive development, but maintained as viewed from developments. Cultural resources would be inventoried as necessary.
- b. Timber - The maximum annual volume would be approximately 15 MBF. Timber harvest would be unregulated in the area under SIA designation. Recreation and visual constraints would make sanitation and salvage harvesting appropriate.
- c. Minerals - The area would be withdrawn from mineral entry; however, mineral potential is low.
- d. Facilities - Roads, trails, and trailheads may be built to provide public access to the area and interpretive facilities.
- e. Protection, Including Pest Management - Limited access would hinder fire suppression and limit opportunities to treat insect and disease problems.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 4, 13, and 15 (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a. Recreation - All alternatives would permit water-oriented recreation development, and background visual quality would be maintained for recreationists. Alternative CMD would improve motorized recreation opportunities, but would reduce visual quality because of intensive timber management. Cultural resources would be inventoried as necessary.
- b. SIA Values - Not designating the area as an SIA would not permit emphasis of the geologic terraces or sagebrush communities. The soils study area would probably be protected.
- c. Timber - An annual contribution of 15 MBF of timber volume would be harvested in Alternative CMD. Visual and recreation constraints on timber harvesting would reduce this volume in Alternatives PRF, CUR, RPA, and UNE.
- d. Water, Soils, and Air - Little impact would be expected in Alternative CMD because of the small amount of harvestable timber. Greater impacts would be expected on both soil productivity and water quality as a result of water-oriented recreation development in Alternatives PRF, CUR, RPA, and UNE. Best Management Practices should minimize the impacts.
- e. Minerals - The area would be open to mineral entry; however, mineral potential is low.
- f. Facilities - Trails, trailheads, and roads necessary for the development and operation of water-oriented recreation facilities would be permitted in Alternatives PRF, CUR, RPA, and UNE. In Alternative CMD, a transportation network would be developed to facilitate timber harvesting.
- g. Protection, Including Pest Management - With improved access there would be greater opportunity to treat insect and disease problems, and fire suppression would be facilitated.

- h. Sensitive Plants - The increase in management activities in all non-SIA alternatives would increase the risk of damage to sensitive plants.

12. SAGEHEN CREEK BASIN (8,373 acres)

The most remarkable natural feature of the Sagehen Creek Basin is the diversity and variety of springs and spring habitats in the area. The area is located in all or part of Sections 1, 2, 10, 11, 12, T.18N, R.15E., Sections 4, 5, 6, 7, 8, 9, T.18N., R.16E, Section 36, T.19N., R.15E., and Sections 31 and 32, T.19N., R.16E, MDB&M. Water derived from rain and heavy snowfall penetrates the porous volcanic rocks characteristic of the region and collects on the impervious bedrock, creating numerous springs of superficial origin. Many small, minerotrophic peatlands (fens) occur throughout the Basin. The largest of them is Mason Fen, a wet, spongy area of a few hectares composed largely of a two-meter deep, nonsphagnum moss and sedge mat. Mason Fen is also being considered as a smaller 30 acre SIA (see number 17). Numerous research projects, including over 130 publications, films, and theses, have been conducted in the Basin. Research on fish and wildlife has been carried out since 1951, primarily by the University of California at Berkeley.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternative NMK).

- a. Recreation - Opportunities for dispersed and motorized recreation and interpretive development would be permitted to facilitate public appreciation and study of the area's spring habitats and peatlands (fens), if not in conflict with research objectives. Visual quality would be reduced because of interpretive development (maintained as viewed from the developments). Cultural resources would be inventoried as necessary.
- b. Timber - The Basin contains approximately 7,461 acres of commercial forest land capable of contributing a maximum annual volume of 27 MMBF to the allowable sale quantity. Unregulated timber management and the visual and recreation constraints would make sanitation and salvage harvesting appropriate.
- c. Water, Soils, and Air - Slight degradation to soil and water quality would be expected from interpretive development. Best Management Practices would minimize impacts.
- d. Minerals - The area would be closed to mineral entry, however, mineral potential is low.
- e. Lands - 350 acres of the Basin are currently under special-use permit with U.C. Berkeley for housing and research facilities. Designation as an SIA would be consistent with the special use.
- f. Facilities - Roads, trails, and trailheads would be constructed to facilitate public use of the area if not in conflict with research objectives.
- g. Sensitive Plants - Encouraging public use of the Basin could increase risk of damage to the sensitive plant habitat.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 3, 8, 12, 13, 14, 15 (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a. Recreation - In all alternatives, the current management direction of cooperative research would be continued, permitting dispersed recreation activities that would not conflict with research objectives. Visual quality would be maintained and cultural resources would probably receive little impact. Alternative CMD would provide for increased

motorized recreation opportunities because of intensive timber management. Cultural resources would be inventoried prior to timber harvest in this alternative.

- b SIA Values - Current research projects would receive protection from management activities but would have increased access in Alternatives PRF, CUR, RPA, CMD, and UNE. Regulated timber management would also be permitted. Nondesignation of the area would not preclude public interpretation of the area's spring habitats and peatlands (fens).
- c Range - In all alternatives both intensive and extensive grazing management would be implemented to the extent it did not interfere with research objectives.
- d Timber - Regulated timber management would be permitted in all non-SIA alternatives, but would be constrained by research objectives in Alternatives PRF, RPA, CMD, and UNE. In Alternative CUR, timber management would be constrained by visual resource requirements.
- e Water, Soils, and Air - Some reductions in water quality and soil productivity would occur in all non-SIA alternatives, ranging from a minimal impact from timber harvesting in Alternatives PRF, CUR, RPA, and UNE to a greater risk of loss from intensive timber management in Alternative CMD
- f Minerals - The area would be open to mineral entry; however, mineral potential is low.
- g Facilities - Trails and roads necessary to aid research and timber harvesting would be permitted in Alternatives PRF, CUR, RPA, and UNE.
- h. Protection, Including Pest Management - Improved access would aid fire suppression and treatment of insect and disease problems. Fuels management would treat activity fuels from timber harvest and would fluctuate with harvest levels
- i Sensitive Plants - Some impact on habitat could be expected because of timber harvest, but sensitive plant habitat in general would be protected as part of timber management practices.

13. INDEPENDENCE LAKE (81 acres)

This is one of the few areas (located in Section 4, T.18N., R.15E., MDB&M) in California that supports a genetically pure strain of the Federally listed as threatened Lahontan cutthroat trout. The stream that feeds into the lake is an important spawning area. Quaternary glacial deposits surround the lake. The site is a well-studied terminal glacial moraine complex that represents the northernmost extent of Sierra Nevada's classical glacial sequences. The moraines at the lake are the best preserved of any in the sequence.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternative NMK).

- a Recreation - Less than 10 percent of the entire area proposed as an SIA is on National Forest System land. Recreation opportunities would be primarily dispersed. Because the significant lake and moraine features are on private land, interpretive developments or research study would not occur on National Forest System lands. Visual quality would remain high. Inventory of cultural resources would be difficult because of poor accessibility.
- b Timber - Approximately 58 acres of commercial forest land are capable of contributing a maximum volume of 21 MBF per year to the annual sale quantity. Unregulated timber management would make sanitation and salvage harvesting appropriate.

- c. Minerals -The area would be closed to mineral entry. Mineral potential is low.
- d. Lands- Over 90 percent of the proposed Independence Lake SIA is in private ownership as well as the significant features. Acquisition of the private lands is not feasible.
- e. Facilities -Trails and trailheads may be located on portions of National Forest System lands.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 10, 11, and 13 (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a. Recreation - Dispersed and motorized recreation would occur in Alternative CMD. Winter recreation development would be emphasized in Alternatives PRF, CUR, and UNE. Alternative RPA would permit recreation activities that would not affect the exchange value of the land. Visual quality would be reduced because of intensive timber management or winter recreation development in Alternatives PRF, CUR, CMD, and UNE. Cultural resources would be inventoried as necessary in all alternatives.
- b. SIA Values - Not designating this area as an SIA would have little impact on its significant features since most are located on private land.
- c. Timber - In Alternative CMD, the maximum annual sale quantity of 21 MBF could be harvested. Timber harvesting would be unregulated in Alternatives PRF, CUR, RPA, and UNE.
- d. Water, Soils, and Air - Water quality and soil productivity could be reduced because of intensive timber management and winter recreation development in all alternatives except RPA, which maintains the exchange value of the land. Any reductions would be minimized by use of Best Management Practices.
- e. Minerals -The area would be open to mineral entry; however, mineral potential is low.
- f. Lands - Alternative RPA would maintain land and resource values necessary to retain a high value for land exchange.
- g. Facilities -Alternatives PRF, CUR, and UNE would permit all-season road construction necessary for winter recreation development and operation. A transportation network to aid timber management and other activities would be developed as necessary in Alternative CMD.
- h. Protection, Including Pest Management -The amount of protection against insect and disease activities would increase with increased accessibility.
- i. Sensitive Plants - A greater risk of impact from intensive timber management and winter recreation development would probably occur in all alternatives except Alternative RPA.

14. HEADWATERS BASIN OF THE NORTH FORK OF THE AMERICAN RIVER (9,381 acres)

This large area includes the Onion Creek Experimental Forest. It is located in all or part of Sections 1, 2, 10, 12, 16, 22, and 24, T.16N., R.14E., Sections 3, 4, 5, 9, 10, 14, 16, 20, 22, 24, 26, 27, 28, 34, and 35, T.16N., R.15E., Sections 32 and 36, T.17N., R.14E., and Section 29, T.17N., R.15E., MDB&M. Over one-half of the area is in private ownership. The river basin contains relatively undisturbed, rich flora that provides an excellent representative example of plant species and soils of the central Sierra Nevada. The variety of slope exposures, range of elevations, and different soil and parent material types create a tremendous diversity of habitat types. This provides numerous opportunities for study and research into all aspects of

plant, animal, and aquatic ecology. Over one-third of the plant families in California occur in this headwaters basin. Ongoing research includes studies of red fir, white fir, and mixed fir forest stands at the Onion Creek Experimental Forest, the establishment of eight permanent study plots in red and white fir forests from 6,000 - 7,000 feet, and collections for a floristic checklist.

Of the TNF land within the area, approximately 5,000 acres within the Onion Creek Experimental Forest are unavailable for regulated timber harvest. A portion of this area is within the Granite Chief Wilderness.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

(Management Prescription #5 (Alternative NMK))

- a. Recreation - Recreation opportunities include dispersed nonmotorized and motorized recreation and scientific and interpretive development to facilitate public appreciation and scientific study of the area's diverse plant, animal, and aquatic ecology. Visual quality may be reduced slightly because of facility development. Cultural resources would be inventoried as necessary.
- b. Wilderness - A portion of the proposed SIA is within the Granite Chief Wilderness. Development permitted in an SIA would not be compatible with wilderness designation.
- c. Timber - Approximately 6,454 acres of commercial forest land are capable of contributing a maximum volume of 2.4 MMBF per year to the allowable sale quantity. Five thousand acres of this are in the Onion Creek Experimental Forest and currently are unavailable for regulated timber harvest. The remaining commercial forest land would be unregulated.
- d. Minerals - The area would be proposed for mineral withdrawal. There is low to moderate mineral potential in the proposed SIA. Most of the Onion Creek Experimental Forest is currently withdrawn from mineral entry. A small portion of the Onion Creek Experimental Forest that is not withdrawn would be proposed for mineral withdrawal.
- e. Lands - Designation as an SIA would be difficult since over one-half of the area is in private ownership. Five thousand acres within the Onion Creek Experimental Forest are already set aside by the Chief of the Forest Service for watershed research purposes.
- f. Protection, Including Pest Management - Lack of access would make fire suppression and treatment of insect and disease problems difficult.
- g. Sensitive Plants - Sensitive plants would be studied and protected.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 1, 2, 3, 13, 14, and 15 (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a. Recreation - Dispersed opportunities would be permitted only in Alternatives PRF, CUR, RPA, and UNE. Both dispersed and motorized opportunities would be provided in Alternative CMD, because the theme for this alternative is intensive timber management. Visual quality would not be altered in Alternatives PRF, CUR, RPA, and UNE, and may be reduced with road development and timber harvest in Alternative CMD. Inventory of cultural resources would be difficult in all alternatives.
- b. Wilderness - A portion of the area is within the Granite Chief Wilderness and will be protected from development and management activities.
- c. SIA Values - In Alternative CMD, intensive timber management would diminish the value of this area for ecological research studies. The remaining alternatives provide for

maintenance of a nearly natural setting and would have little effect on the identified SIA values.

- d. Fish and Wildlife - No impacts are expected in Alternatives PRF, CUR, RPA, and UNE. Alternative CMD would produce changes in fish and wildlife habitats.
- e. Range - Grazing is permitted in all alternatives and extensive management would be implemented.
- f. Timber - No regulated timber harvesting would occur in Alternatives PRF, CUR, RPA, and UNE. Some regulated harvesting may occur in Alternative CMD, subject to research and visual constraints. The maximum annual volume of 500 MBF outside of Onion Experimental Forest could be harvested in Alternative CMD.
- g. Water, Soils, and Air - Water quality would remain high in Alternatives PRF, CUR, RPA, and UNE, and would be reduced to some degree in Alternative CMD because of road development and timber harvesting. No loss of soil productivity would be expected in Alternatives PRF, CUR, RPA, and UNE, and a slight risk of loss of productivity would occur in Alternative CMD from intensive timber management.
- h. Minerals - The area (with exception of the Onion Creek Experimental Forest and the Granite Chief Wilderness) would be open to mineral entry, providing some opportunity for low to moderate mineral commodity production.
- i. Facilities - Trails and trailheads only would be developed in Alternatives PRF, CUR, RPA, and UNE. In Alternative CMD a transportation network would be developed to facilitate timber harvest and other activities.
- j. Sensitive Plants - Increased activities and access could increase the risk of damage to sensitive plants in Alternative CMD.

15. SAN JUAN RIDGE (6,541 acres)

The major theme of this area is 'Paleocene to Eocene, The Emerging Dominance of Mammals.' Other themes identified include 'Economic Geology - Hydraulic Mining and Sculpture of the Land.'

The area (located in all or part of Section 12, T.17N., R.19E., Sections 4, 5, 6, 7, 8, 9, 18, T.17N., R.10E., Sections 20, 21, 22, 23, 24, 26, 28, 34 and 35, T.18N., R.9E., and Sections 19, 21, 28, 32, 33, and 34, T.18N., R.10E., MDB&M) consists of well developed Tertiary auriferous gravels, some of which were hydraulically mined in the 19th century. The mining scars have eroded to form dramatic cliffs which are characteristic of badlands topography. Portions of the Malakoff Diggins State Park are within the proposed area. The ponds in the bottom of the mining area support the only occurrence of cranberry in the Sierra Nevada. The area is also unusual in that when hydraulic mining was halted by court order in 1884, extensive gold bearing gravels were left exposed, but unmined. The area is also ideally suited for the study of plant succession.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

(Management Prescription #5 (Alternative NMK).

- a. Recreation - Recreation opportunities consist of motorized and dispersed recreation and interpretive development aiding public appreciation of the geologic and mining history of the area. Visual quality has been altered over the years because of hydraulic mining. Existing visual quality may be reduced slightly because of interpretive facility development. Cultural resources would be inventoried and could be interpreted as part of the overall interpretive program in the area.

- b. Timber - Approximately 6,271 acres of commercial forest land are capable of contributing a maximum of 2.3 MMBF per year to the allowable sale quantity. Unregulated timber management would make sanitation and salvage harvesting appropriate
- c. Water, Soils, and Air - Some reduction in water quality and loss of soil productivity could occur because of road and trail development and interpretive facility construction. Dust from these activities may cause short-term reductions in air quality, but State Air Resources Board requirements would still be met.
- d. Minerals - This area would be withdrawn from mineral entry. Mineral potential ranges from high to very high. A significant potential loss of mineral commodity production would occur as a result of withdrawal.
- e. Land - Establishment of the area as an SIA would be difficult since over 80 percent is in private or other non-Federal ownership. Some of the more significant features that are already protected are located within Malakoff State Park.
- f. Facilities - Roads, trails, and trailheads would be permitted to facilitate public use and timber harvest.
- g. Sensitive Plants - Increased access and visitor use could raise the risk of damage to sensitive plants

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 13 and 15 (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a. Recreation - Recreation opportunities would be similar to the current situation. Dispersed motorized and developed recreation now occur on National Forest System lands and in Malakoff State Park. The State Park offers several interpretive facilities explaining the historical significance of the area. Timber harvesting would expand the transportation network and improve motorized recreation opportunities. Visual quality would be reduced because of intensive timber management in all non-SIA alternatives. A predominantly natural-appearing landscape would be maintained in Alternative UNE and portions of Alternatives PRF, RPA, and CMD. Cultural resources would be inventoried as necessary.
- b. SIA Values - Not designating San Juan Ridge as an SIA may result in the loss of a study area for natural vegetation succession and the only occurrence of cranberry in the Sierra Nevada. These and other significant attributes of the area, such as the hydraulic mining and geologic history of San Juan Ridge, are currently protected within the State Park.
- c. Timber - Regulated timber harvesting would occur, permitting the maximum annual volume production of 2.3 MMBF.
- d. Water, Soils, and Air - Water quality may be reduced because of intensive timber management. A higher loss of soil productivity may result from increased timber harvest. Short-term reduction in air quality may occur from dust from road use and timber harvesting, but State Air Resources Board requirements would be met.
- e. Minerals - This area would be open to mineral entry providing potential for significant mineral commodity production.
- f. Facilities - All non-SIA alternatives would develop a transportation network necessary to facilitate timber harvesting and other activities.
- g. Protection, Including Pest Management - Increased access would allow for better treatment of insect and disease problems and facilitate fire suppression. Fuels

management would treat activity fuels from timber harvesting and would fluctuate with harvest levels

- h Sensitive Plants - Risk of damage to sensitive plants could be greater because of increased timber harvesting.

16. MACKLIN CREEK (380 acres)

The major theme of this area is to preserve the Lahontan cutthroat trout. The creek contains the only existing remnant of the Pyramid Lake population of this species. Originally, the fish occurred in the Lahontan Basin, which in California includes the Truckee, Walker, and Carson River drainages and Lake Tahoe. The introduction of other trout species into these areas has resulted in drastically diminished and hybridized populations of Lahontan cutthroat trout. The Macklin Creek occurrence of this species is outside its former known range. The area is located in all or part of Sections 14, 15, 22, 23, T.19N., R.12E., MDB&M. This trout was introduced in the late 1800's and now represents one of the few pure Lahontan populations. This population has been used to reintroduce the species into streams within its former natural range. Approximately one-half of the area is in private or State of California ownership, including most of Macklin Creek itself. The State purchased some land along the creek to protect the trout's habitat. Logging has occurred on portions of the private lands, and some of the TNF land is under contract to be logged (Pinoli Timber Sale). Timber sale roads have already been built to aid the timber harvest. Some roads and harvest units are within the proposed SIA area.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternative NMK).

- a. Recreation - Recreation opportunities consist mainly of dispersed forms, such as hiking and camping. The creek is closed to fishing by State law. Some interpretive facilities could be developed to explain the significance of the Lahontan cutthroat and its habitat. Visual quality may be reduced slightly because of limited timber harvesting. Cultural resources would be inventoried.
- b. Fish and Wildlife - The Lahontan cutthroat trout habitat would be protected and improved.
- c. Timber - Approximately 331 acres of commercial forest land are capable of contributing a maximum of 120 MBF per year to the allowable sale quantity. Unregulated timber management would make sanitation and salvage harvesting appropriate.
- d. Water, Soils, and Air - Water quality, especially trout habitat, would be protected and Best Management Practices implemented during any timber harvesting or facility development.
- e. Minerals - The area would be proposed for withdrawal from mineral entry. The area has a moderate potential for mineral commodity production.
- f. Lands - Private and State of California property extends on both sides of Macklin Creek in the northern two-thirds of the proposed SIA.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #'s 7, 13, and 15. (Alternatives PRF, CUR, RPA, CMD, and UNE).

- a. Recreation - Alternative CUR would permit both dispersed and motorized recreation opportunities that would enhance or would not adversely impact deer, waterfowl, and fishery habitat. Dispersed nonmotorized and motorized recreation opportunities would be provided in Alternatives PRF, RPA, CMD, and UNE. Wildlife interpretive facilities would be permitted in Alternative CUR. No interpretive facilities would be emphasized.

in Alternatives PRF, RPA, CMD, and UNE. Visual quality would be reduced as a result of timber harvesting. Cultural resources would be inventoried as necessary.

- b. SIA Values - The Lahontan cutthroat would be protected regardless of SIA designation.
- c. Fish and Wildlife - Lahontan cutthroat trout habitat would be protected
- d. Timber - In Alternatives PRF, RPA, CMD, and UNE, the maximum annual volume of 120 MBF may be harvested. Alternative CUR would permit regulated timber harvest that would enhance or would not affect fishery and wildlife habitat.
- e. Water, Soils, and Air - Water quality may be reduced slightly because of timber harvest, but impacts would be minimized by implementing Best Management Practices. Some loss of soil productivity could occur and there would be short-term reduction in air quality because of dust from timber harvesting and road use. State Air Resources Board requirements would be met.
- f. Minerals - The area would be open to mineral entry. There is moderate potential for mineral commodity production.
- g. Facilities - All non-SIA alternatives would develop and maintain a transportation network necessary to facilitate timber harvest and other activities
- h. Protection - Improved access would facilitate treatment of insect and disease problems. Fuels management would treat activity fuels from timber harvest and fluctuate with harvest levels.
- i. Sensitive Plants - Risk of damage to sensitive plants could be greater in all non-SIA alternatives.

17. MASON FEN (30 Acres)

The Mason Fen represents the largest fen in the Sagehen Basin vicinity. It is one of the varieties of peatland identified in California. The fen is located near Truckee, California at the University of California Sagehen Creek Field Station (Section 7, T.18N., R.16E., MDB&M). The Mason Fen has been the subject of research since 1957. The Sagehen Creek area receives water from springs. Precipitation from rain and heavy winter snowfall penetrates the porous volcanic rocks that are characteristic of the region, and collects on impervious bedrock, creating numerous springs (Savage 1973). About 40 plant species have been identified from the Mason Fen (Erman and Erman 1975). Two carnivorous plants are common on the Mason Fen *Drosera rotundifolia* (roundleaf sundew) and *D. anglica* (English sundew). This is an unusual occurrence in California.

I. ENVIRONMENTAL CONSEQUENCES OF SIA DESIGNATION

Management Prescription #5 (Alternatives PRF, CMD, NMK, and UNE)

- a. Recreation - Opportunities for dispersed recreation would occur and be encouraged if public use did not affect SIA values. The ecosystem is quite fragile and will not support heavy use. Visual quality would be maintained and cultural resources would be protected.
- b. Timber - This area is unsuited for regulated timber production.
- c. Minerals - The area would be proposed for withdrawal; however, the mineral potential is low.
- d. Facilities - Due to the fragile nature of this area, no roads, trails, or trailheads would be permitted.

e Sensitive Plants - Designation would not change the current situation.

II. ENVIRONMENTAL CONSEQUENCES OF NONSPECIAL INTEREST AREA DESIGNATION

Management Prescription #5 (Alternatives CUR and RPA).

Because the area is located within the U C Sagehen Creek Field Station, there would be no consequences from not designating the area as an SIA, except the area would not be withdrawn from mineral entry.

18. WILD PLUM WHITE FIR FOREST (716 acres)

The major theme of this area (Section 30, T.20N., R.13E, MDB&M) is Pacific forest. Specifically, the area represents a rare old-growth white fir forest that is well suited for the study of vegetation succession and the role of fire in mixed conifer forests. It is generally believed that the Sierra Nevada was originally an open, highly productive forest with large sugar pine, ponderosa pine, incense cedar, and Douglas fir trees. The forest was kept open by frequent ground fires. With the advent of fire control, a jungle of white fir has invaded. The Sierra mixed conifer forest is changing to a white fir forest. This model of Sierran ecology is being questioned, and the old-growth white fir stands at Wild Plum are thought to contain valuable information to understand forest ecology.

Approximately one-half of the area is in private ownership (Southern Pacific Land Company), and logging has taken place since 1975, when the old-growth white fir stands were identified. Likewise, the TNF land in Section 30 is also scheduled to be logged in the near future. The area is currently under contract (Deadhorse Timber Sale), and the white fir old growth has been partially logged.

This area was considered for SIA designation, but eliminated because of current and past logging of the area, which has removed the white fir

APPENDIX D

ECONOMIC EFFICIENCY ANALYSIS

CONCEPTUAL BACKGROUND

Present net value (PNV) is the criterion used to maximize net benefits in planning benchmarks and alternatives for the Tahoe National Forest. For each alternative, PNV is the difference between the discounted value of all priced outputs and all Forest Service management and investment costs over the analysis period. The priced outputs are those that are, or can be, exchanged in the market place. They include the value of forage, the stumpage value of timber, the value of commercial fish in the stream, fur animals and other harvested miscellaneous products, the value of any increased water flow quantities, and all recreation visitor days, including those for wildlife, fishing, and wilderness experiences.

The alternatives are designed to achieve the specified nonpriced outputs and to meet constraints at the least cost. Thus, the PNV of each alternative estimates the value of the maximum attainable benefits of priced outputs. It is the value of priced benefits realized in excess of all the Forest Service costs of producing priced outputs and nonpriced outputs and meeting management constraints. PNV, therefore, is an estimate of the market value of the current forest resources after all costs of producing outputs and meeting constraints have been subtracted from the value of the expected flow of priced outputs.

Net public benefit is defined to be the overall value to the Nation of all outputs and positive effects (benefits) less all the associated Forest Service inputs and negative effects (costs) for producing those primary benefits whether they can be quantitatively valued or not. Thus, conceptually, net public benefits are the sum of PNV plus the full value of nonpriced outputs. The full value of nonpriced benefits is used because their cost of production has been accounted for in PNV. The nonpriced benefits here included are outputs such as threatened and endangered species maintenance or enhancement; natural and scientific areas: cultural site reservations such as Indian religious sites, and historical or anthropological sites: visual quality in excess of full service day standards; diversity objectives: or air quality in excess of minimum management requirements. Minimum management requirements in this context are standards that must be met in the production of any or all outputs from the Forest. The minimum level, therefore, is a cost of production in the multiple-use context.

There are also second level benefits or effects that are also the concern of National Forest policy and management. These include local income and job effects on economic development of communities: net cost impacts on taxpayers: price effects on consumers of forest products and other producers of those products: payments to communities in lieu of taxes: and benefits to specific users of National Forest products who pay no fees, or fees less than the price of the valued outputs. All these are distributive welfare effects of National Forest production. All the foregoing distributive effects and impacts have been the object of National policy issues and discussions in both the Administration and the Congress. Because they are distributive effects, they are essentially questions of equity rather than efficiency, and they involve questions of who should get benefits and who pays the costs. They cannot be assessed in the context of the efficiency criteria associated with the PNV and the net public benefit concepts.

EIS PRESENTATION

The methodology, background, and results of the economic efficiency analysis that was conducted during the planning process are presented throughout the EIS. As a result, all of the major sections of the EIS, including those listed below, must be read in order to get a complete picture of the analysis that was conducted.

Context

Discussion of how economic efficiency Analysis was used in the process of developing alternatives.

Outputs, total cost, and PNV for each of the benchmarks.

Results of the constraint analysis and a comparison of the alternatives in terms of PNV. This is the most comprehensive summary of the analysis results in the EIS

Background information on economic conditions and the resource supply-demand situation for the Forest.

How and why PNV of the alternatives differs

Technical details of the modeling and analysis process, including a description of basic estimates and assumptions on benefits, costs, and interest rates.

Reference

Chapter 2, Section B, page 24

Chapter 2, Section C, pages 2.5 - 2.13

Chapter 2, Section F, pages 2.88 - 2.96

Chapter 3

Chapter 4

Appendix B

APPENDIX E

WILD AND SCENIC RIVER EVALUATION

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APPENDIX E

WILD AND SCENIC RIVER EVALUATION

Appendix E is an assessment of the eligibility of rivers on the Tahoe National Forest (TNF) included in the Nationwide Rivers Inventory (NRI) and rivers recommended by the public from response to the Forest Plan. The appendix is organized into two sections. The first section discusses the Middle Yuba River and the South Yuba River, which were included in the NRI. The second section discusses other rivers on the Forest and their disposition in regard to Wild and Scenic River eligibility. The rivers discussed are Canyon Creek, North Fork of the Middle Fork American River, Middle Fork American River, Truckee River, Laveuola Creek, North Yuba River, and the Rubicon River.

MIDDLE YUBA AND SOUTH YUBA RIVERS

The Heritage Conservation and Recreation Service (HCRS), now a part of the National Park Service, included portions of the Middle Yuba and South Yuba Rivers in the NRI made in 1980 and 1981. Based on the inclusion of these two rivers in the Nationwide list, the TNF conducted an inventory and eligibility study for the rivers as discussed below.

The portion of the Middle Yuba River included in the Inventory is from Milton Reservoir to the head of the impoundment above Our House Dam, for a distance of 31 miles. The portion of the South Yuba River is from Lake Spaulding to the Forest boundary for a distance of 21 miles. (See the maps on pages E-10 through E-18)

Both of these rivers are located in steep "V" shaped canyons covered with mixed conifers, hardwoods, and brush typical of the west side of the Sierra Nevada Mountains. Both drainages are located in the Cascade Sierra Mountains-Sierra Nevada Physiographic Province - 23. This is the same province that includes the Middle Fork of the Feather Wild and Scenic River and the North Fork of the American Wild River.

The inventory identified the best remaining examples of free-flowing rivers in each physiographic province and included only those streams that appeared to have an outstanding value or combination of notable values.

A. Notable Features

1. The NRI identified the following as potential outstandingly remarkable values for the inventoried segments of the Middle and South Yuba Rivers:
 - (a) Scenic values were identified for each river. For the most part both rivers flow through steep, rugged canyons with canyon walls rising to 2000 feet above the rivers. The box canyons in the upper portion of the Middle Yuba River are the most notable scenic features. Access is limited.
 - (b) Recreation values were identified for the South Yuba River.

Both rivers lie within a three-hour drive from the Sacramento Metropolitan area. For the more accessible portions of the rivers, recreation use is moderate to heavy and includes swimming, fishing, picnicking, camping, recreational gold mining, and hiking. Minor amounts of river floating also occur.

Recreation use is low in the remaining sections and includes fishing, swimming, recreational gold mining, hiking, and camping.

- (c) Fishery values were identified for the Middle Yuba River. Both rivers are considered a cold water fishery by the TNF and California Department of Fish and Game, with resident rainbow and brown trout. In the accessible portions, the fishery is augmented by regular plants of rainbow trout by the California Department of Fish and Game

The current quality of the fishery is fair to good in both rivers.

- (d) Historic values were identified in the South Yuba River. Both river corridors show evidence of historic gold mining for almost their entire lengths. Water was diverted from both the Middle and South Yuba Rivers for use in hydraulic mining operations downstream. Remnants of flumes and ditches may be seen at many locations in each river corridor. Current dredging and mining operations are impacting some of the historic mining sites.

While very few archaeological surveys have been completed within the actual river Corridors, it is assumed they contain a number of prehistoric sites because of surveys made in the North Yuba, the North Fork of the American, and similar river canyons. It is also assumed from experience in other similar canyons that many of these prehistoric sites have been wholly or partially destroyed by the mining activity that occurred and is occurring in the river corridors.

2. Other values present in the inventoried river segments include:

- (a) Wildlife. Blacktail deer, black bear, and other smaller mammals inhabit the river Corridors. Golden eagles are sighted occasionally and some migratory waterfowl are present at certain times of the year. Some of the south-facing slopes at the lower elevations are important winter deer range.
- (b) Botanic: No known threatened and endangered (T&E) species are present in the river canyons. Both rivers are in ecosystem M2610-5.
- (c) Geologic: Basic rock units for both rivers are sedimentary and metasedimentary members of the Calaveras and Kanaka formations. The rivers cross these and other rock types including the Melones Fault Zone. Both rivers also pass through short sections of granitic rocks.

Both inventoried river segments contain gold-bearing gravels along their full length and contain numerous mining claims.

- (d) Timber: The inventoried portion of the Middle Yuba River contains about 3,300 acres of forest lands with a volume of about 47,500,000 board feet. The inventoried portion of the South Yuba River contains about 2,400 forested acres with a volume of about 22,000,000 board feet.

B. Water Quality

The water quality in both rivers is good, with no major sources of pollution. The town of Washington is a possible source of pollution but no problems have been identified downstream from this point.

C. River Access and Landownership

Paved access to the South Yuba River is provided by the Bowman Road at Lang Crossing and the County road to Washington.

Unpaved road access to the Middle Yuba River is to be found at Milton Dam, Gold Canyon, Footes Crossing, and the Our House Dam. An unpaved road parallels the South Yuba River from Washington upstream about six miles.

The remaining portions of the river corridors are accessible by a few foot trails or low standard vehicle trails. There are no trails that proceed up or down the canyons from the various roads and trails that access the rivers.

The inventory for the Middle Yuba River includes about 7,710 acres, of which 5,470 acres, or 71%, are National Forest System lands and the remaining 2,240 acres, or 29%, are private lands.

The South Yuba River includes about 3,550 acres, of which 1,635 acres, or 46%, are National Forest System lands, and 1,915 acres, or 54%, are private lands. About 400 acres of the private lands lie outside the TNF boundary

D. Water Resource Development

Water from both the Middle Yuba and South Yuba Rivers is used for municipal, irrigation, and power purposes.

The Yuba-Bear project of the Nevada Irrigation District stores water in Jackson Meadows and Milton Reservoirs in the headwaters of the Middle Yuba River and diverts it through the Milton-Bowman tunnel into Bowman Reservoir. From there it is transported by flumes, tunnels, and ditches into Lake Spaulding in the South Yuba River drainage. Flumes and ditches take it from there through the Deer Creek Powerhouse and into Scotts Flat Reservoir or through the Drum Powerhouse and into the Bear River drainage.

There are required year-round fishery releases of 3 c.f.s. from Milton Reservoir into the Middle Yuba River and 5 c.f.s. from Lake Spaulding into the South Yuba River. The numerous tributaries below these points augment these flows to an acceptable level within a relatively short distance.

The Yuba River Project of the Yuba County Water Agency includes the Our House Dam on the Middle Yuba River, which is the lower end of the inventoried segment. This 77-foot high dam provides storage for about 290 acre feet of water, which is diverted through tunnels to Bullards Bar Reservoir on the North Yuba River. There is a required fishery release of 50 c.f.s. from March 15 to June 15 and 30 c.f.s. for the remainder of the year.

The California Department of Water Resources has identified several potential reservoir sites in 1957 and 1964 bulletins. Yuba County Water Agency has identified several reservoir sites on the South Yuba River. The continuing interest in the development of small hydroelectric projects will certainly identify additional sites that have potential for development. Small hydroelectric projects where water is not diverted out of the drainage can probably be constructed without conflict with current water rights.

E. Threats

Both of the inventoried portions of the Middle and South Yuba Rivers are located in mineralized geological formations and have mining histories that date from 1849. There are currently about 250 mining claims on record in these river corridors. In addition, much of the private land in the river corridors is a result of mineral patents. Recent history indicates that mining activity will probably continue at current or higher levels. There is also a growing resistance on the part of mining claimants to allow the public to use their claims for recreational purposes.

For the last several years mining activity has been a major impact on both rivers, especially on the Middle Yuba River. Mining activity, including suction dredging and the extended occupancy associated with mining, has severely impacted the fishery and is creating a growing litter and sanitation problem.

The 29% private lands in the Middle Yuba corridor and 54% private lands in the South Yuba corridor are a threat in that any development or activity that occurs on these lands will probably occur within the river corridors.

Timber harvest activities on private lands within and adjacent to the inventoried river corridors affect the potential of these rivers for wild or scenic river classification. The majority of the north facing slopes in these river canyons contain commercial timber stands that go from the ridgetops down to the rivers. Many of these stands have been logged, and logging activities will continue on

these productive lands. The steeper slopes will be logged by cable, skyline, or helicopter harvest systems, which are generally only applicable to the clearcut cutting method. This will result in an increased number of clearcut blocks within and adjacent to the inventoried corridors.

This is also true to some extent for the National Forest System lands adjacent to the inventoried corridors. On the commercial lands, timber harvesting has occurred and timber management activities are planned to continue.

F. Current Protection

Those portions of the rivers on National Forest System lands are administered under multiple use management which provides for the protection of the watershed and other resource values but must provide for mineral exploration and development under various mineral-related laws.

G. Discussion of Specific River Segments

1 Middle Yuba *River*

Segment 1: That portion of the Middle Yuba from Milton Dam to its confluence with Wolf Creek, a distance of 17 miles. This segment contains about 2845 acres, or 63%, National Forest System lands, and 1690 acres, or 37%, private lands.

The only road access is by way of the Henness Pass road at Milton Dam, and the only trail access is the Tehama Trail 11 E14 that runs from Graniteville to the river and on to Palmer Ridge. There are no trails up or down the river corridor.

This segment contains approximately 50 known mining claims which contain very few permanent improvements

The box canyons are the most significant scenic features in this segment. Investigation and further review has identified the box canyons and overall scenic quality as outstandingly remarkable features when compared to features to be found in the designated and proposed rivers in the Cascade Sierra Mountains Sierra Nevada Physiographic Province - 23d.

This segment is determined to be eligible for designation.

Segment 2: That portion of the Middle Yuba River from its confluence with Wolf Creek to the head of the impoundment at Our House Dam, a distance of 14 miles. This segment contains about 2626 acres, or 83%, National Forest System lands, and 552 acres, or 17%, private lands

Access is provided by the Foote Crossing Road, the Gold Canyon Road, and the Our House Dam Road. There are no National Forest System trails to this segment, but there are several old mining trails that go to the river at Indian Creek, Bloody Run, Moores Flat Creek, and Orleans Flat. There are no trails that provide access up or down the river. There are a few private, four-wheel drive trails providing access to various mining operations, but they are not available for public use

This segment contains about 80 known mining claims and the private land portions contain a number of additional mining operations. A portion of these private lands is a result of patented mining claims.

Investigation and further review has identified the overall scenic quality as outstandingly remarkable features when compared to features to be found in the designated and proposed rivers in the Cascade Sierra Mountains Sierra Nevada Physiographic Province

This segment is determined to be eligible for designation. Segment 1 and 2 together have the potential to be classified as Wild', 'Scenic' or 'Recreation'.

2. South Yuba River

Segment 1: That portion of the South Yuba River from Lake Spaulding downstream to one-half mile below its confluence with Fall Creek, a distance of about six miles. This segment includes about 340 acres, or 30%, National Forest System lands, and 780 acres, or 70%, private lands.

Access is by the Bowman Road at Lang Crossing and by the county road that follows upriver from the town of Washington to about one mile below Fall Creek. There are no trails to the river in this segment, nor are there trails providing access up and down river.

This segment contains 20 known mining claims, and a portion of the private lands is a result of patented mining claims.

Remnants of the South Yuba Canal Company wooden flume can be seen within and adjacent to this segment of the river corridor. There is evidence of historic mining activity in the segment, although much of it is being affected by current mining activity.

Examination has identified the overall scenic quality and recreational values as outstandingly remarkable features in this segment when compared to the designated Wild and Scenic Rivers in the Cascade-Sierra Mountains-Sierra Nevada Physiographic Province.

This segment is determined to be eligible for designation, and has the potential to be classified as 'scenic' or 'Recreation'.

Segment 2 That portion of the South Yuba River from one-half mile below its confluence with Fall Creek, downstream to its confluence with Poorman Creek, a distance of about 8 miles. This segment contains about 765 acres, or 62%, National Forest System lands, and 465 acres, or 38%, private lands.

Primary access is by the paved County road from Highway 20 to Washington. From Washington, an unpaved County road follows the South Yuba River upstream to just below Fall Creek, and another follows downriver to just above the confluence with Poorman Creek, where it climbs out of the canyon toward Relief Hill and North Bloomfield in Malakoff State Park. The only National Forest System trail is the Canyon Creek Trail 12E13, which provides access from the South Yuba River up Canyon Creek to the Bowman Road.

This segment includes the town of Washington and a number of other scattered private residence located along the South Yuba River. Washington is a historic mining town that has been continuously occupied since about 1850. The present population of Washington is about 150 people.

Mining is also a significant activity, with some 60 known mining claims in this segment. Some of the private land is a result of patented mining claims.

Examination and further review has identified the overall scenic quality and recreational values of the canyon as outstandingly remarkable features in this segment when compared to features to be found in the designated and proposed rivers in the Cascade-Sierra Mountains-Sierra Nevada Physiographic Province.

This segment is determined to be eligible for designation, and has the potential to be classified as 'recreation.'

Segment 3 That portion of the South Yuba River from its confluence with Poorman Creek downstream to the Forest boundary, about three-tenths of a mile below the confluence with New York Canyon, a distance of about 7 miles. This segment contains about 525 acres, or 40%, National Forest System lands, and about 785 acres, or 60%, private lands. About 405 acres of private land are outside the TNF boundary.

There is no road access to this segment. One National Forest System trail, Missouri Bar 10E11, provides access to the river from North Bloomfield in the Malakoff Diggings State Park. There are several low-standard, 4-wheel drive trails to private lands or mining claims in the river corridor. These are generally gated, locked, and unavailable to the public. The BLM South Yuba trail comes upriver to the Forest boundary from Edwards Crossing.

There are scattered private land developments in this segment and about 35 known mining claims. Mining is the only significant activity that is occurring in this segment at this time.

Examination and further review has identified the overall scenic quality and recreational values as outstandingly remarkable features in this segment when compared to the designated and proposed rivers in the Cascadesierra MountainsSierra Nevada Physiographic Province.

This segment is determined to be eligible for designation, and has the potential to be classified as 'scenic' or 'recreation'

H. Determination of Eligibility

The NRI identifies all free-flowing streams that appear to contain features that are potentially outstandingly remarkable. These values are based upon preliminary investigations and not upon an intensive examination of the individual rivers or of the values to be found in the physiographic province.

Scenic and fishery values were identified for the Middle Yuba River inventoried segments. Scenic, recreational, and historical values were identified for the South Yuba River inventoried segments. When these values were evaluated, fisheries on the Middle Yuba and historical values on the South Yuba were found to be common to the river canyons on the west slope of the Sierra Nevada Mountains. For the Middle Yuba River Scenic values were identified as outstandingly remarkable features for the river. Scenic and recreational values were identified as outstandingly remarkable for the South Yuba River.

Therefore, it is determined that Scenic and Recreation values were identified in the inventoried portions of the Middle and South Yuba Rivers and determined to be outstandingly remarkable. Therefore, they are eligible for inclusion in the Wild and Scenic River system.

The following table summarizes this determination.

TABLE E.1 - DETERMINATION OF ELIGIBILITY - WILD & SCENIC RIVER SYSTEM

River Segment	WILD				SCENIC			RECREATION			Potential Classification Eligibility	
	Free of Impoundments?	Generally Inaccessible Except by Trail?	Watershed Shoreline Essentially Pristine?	Waters Unpolluted?	Free of Impoundments?	Accessible in Places by Roads?	Watershed Shoreline Largely Pristine and Undeveloped?	Readily Accessible by Road or Railroad?	Some Development by Shoreline?	Some Impoundment or Diversion in Past?		
Mid Yuba-Seg 1	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes	Eligible
Mid Yuba- Seg 2	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Eligible
So Yuba - Seg 1	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes	Eligible
So Yuba - Seg 2	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Eligible
So Yuba - Seg 3	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes	Eligible

OTHER RIVERS RECOMMENDED FROM PUBLIC RESPONSE AND FOREST REVIEW

As a part of the land management planning process, the TNF addressed the Middle and South Yuba Rivers to determine if a recommendation should be made to include them as rivers to receive study for designation as components of the Wild and Scenic Rivers system. Public comment was received regarding the plan, naming the above rivers, as well as the North Yuba River, Canyon Creek, Lavezzola Creek, North Fork of the Middle Fork American River, Middle Fork American River, and Upper Rubicon River as additional components. The Wild and Scenic Rivers Act establishes the purpose and authority for study of wild and scenic rivers. Rivers are identified for study by several means including Federal statute, which mandated study, identification by the Secretary of Agriculture or Interior, the NRI developed by the National Park Service, and through the Forest land management planning process.

The North Fork American River was named in the Wild and Scenic Rivers Act as a river to be studied for inclusion. The North, Middle, and South Yuba Rivers, the Truckee River, and the Rubicon River were considered during the NRI process. The Upper Rubicon River will be studied jointly for eligibility by the Eldorado and Tahoe National Forests.

The Truckee River will be studied for eligibility and suitability in coordination with the Lake Tahoe Basin Management Unit (LTBMU) in the next three years. Designation of the Truckee River is not included in any alternatives. Wild and Scenic River values will be protected for a quarter-mile corridor on each side of the river until such time as eligibility and, if necessary, suitability studies are completed.

In order to ensure that nothing was overlooked in the NRI as well as in the land management planning process, all additional streams named in the public comment process were given consideration to determine if there might be any outstandingly remarkable features associated with any of these rivers.

An interdisciplinary process was used to determine if there were any truly outstandingly remarkable features associated with any of the above-listed streams. Disciplines represented in the interdisciplinary process were: landscape architect, archaeologist, geologist, range conservationist, forester, wildlife biologist, hydrologist, engineer, as well as personnel from the respective Ranger Districts familiar with the rivers.

For a river to be eligible for designation to the National System it must be free-flowing and, with its adjacent land area, possess one or more of the following outstandingly remarkable values:

1. Scenic
2. Recreational
3. Geological
4. Fish and Wildlife
5. Historical
6. Cultural
7. Other values, including ecological values.

The determination that a river area contains outstandingly remarkable values is a professional judgment on the part of the study team.

It was determined that Canyon Creek, Lavezzola Creek, North Fork of the Middle Fork, and the Middle Fork American River did contain stretches of free-flowing streams with many noteworthy features. However, it was not felt that any of these four rivers contained truly outstandingly remarkable features.

For those streams that were not considered during the NRI process (North Fork of the Middle Fork American River (N.F.M.F.), Middle Fork American River, Canyon Creek, and Lavezzola Creek, the following features are noteworthy:

1. Scenic: All four flow through deep gorges with steep canyon walls and have high scenic quality. This type of landscape is relatively common on the west slope of the Sierra Nevada. The N.F.M.F. American River is very rugged, having heavily dissected landscape, with brush and oaks at the lower elevations and on the south and west facing slopes. The Middle Fork of the American River has the most defined gorge of the four rivers, characterized by steep, rugged, and rocky

slopes, with brush and oaks on the south facing slopes and conifers on the north facing slopes. Canyon Creek is characterized by generally steep to very steep slopes averaging 1,000 feet in height. The slopes are generally covered with mixed conifer stands and have a 'Wet forest' look compared to the 'dry' look of the other two canyons. Lavezzola Creek also flows in a steep canyon with riparian and mixed conifer vegetation along its slopes.

2. **Recreational:** The free-flowing stretches of these rivers are very difficult to access and recreational use is very light. The N F M.F. American River is accessed by occasional steep trails which were usually pioneered by early miners. OHV use, fishing, and hiking are the primary activities within the canyon area, characterized by light use. The Middle Fork American River is not accessed by any system trail but is accessed by one road on the north side of the river. Light fishing and rafting are the main activities along the river. Canyon Creek has occasional trails and a few rough road access points along the river. Use is very light and primarily limited to fishing and hiking. Lavezzola Creek has partial road access at its lower end and some trail access higher in the drainage. In the better access areas recreation use, primarily fishing, is moderate and in the more remote stretches recreation use is light.
3. **Geological:** There are no known outstanding geologic values for any of these streams.
4. **Fish and Wildlife:** There are no known outstanding fish or wildlife values. All four rivers are considered to be important and contain valued wildlife habitat for a wide range of species. Some of the more notable species are deer, raccoon, black bear, and spotted owls. High populations of many rodents are supported along these rivers and golden eagles are occasional visitors to these rivers. While the wildlife are diverse, important, and valued, there is nothing along these rivers that distinguish or make the wildlife more uncommon along these rivers than many rivers along the whole Sierra Nevada physiographic province. All four rivers have natural trout fisheries typical for the region. Lavezzola Creek is designated a Wild Trout Stream by the California Fish and Game Department. Certain areas along these rivers would be expected to have good fishing opportunities because of the poor access. While the fishery and fish habitat are valued and considered important, there is nothing of distinction that would indicate that there are outstandingly remarkable values for fisheries along these four rivers.
5. **Historical:** Although there are many sites in good condition, there are no known sites that would constitute outstandingly remarkable values. All three rivers have a history of early gold mining and associated settlements. While many of these sites would have local interest and be of value in themselves, they are considered typical for the region and do not stand out as being distinctive or unique for that period of history.
6. **Cultural:** There are no known sites that are considered outstandingly remarkable along these four rivers. The cultural resources along these rivers are considered typical for the region. Many of the sites are of value from a local standpoint and, due to poor access, are generally in fairly good condition and not previously disturbed by mining activities. However, none of the sites have been identified as distinctive or unusual enough to be considered outstandingly remarkable.
7. **Other values:** Although there are sensitive plants located along the N F M.F. American River, they are not considered outstandingly remarkable and none of the plant associations have been determined to have special or unique ecological qualities that would be considered outstandingly remarkable. The plant associations that do exist are considered typical for the region.

The values for each river are documented in the outstanding features matrix featured in Table E-2.

Because there are no known outstandingly remarkable features in the above mentioned streams, they are **not** eligible for consideration as components of the wild and scenic river system, and no further studies are necessary.

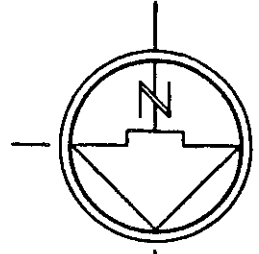
TABLE E-2 - OUTSTANDING FEATURES

Outstanding Feature	Canyon Creek	MFAR & Lavezzola	NFMFAR
Scenic	Deep gorge No roads except Poker Flat	Deep gorge	Deep gorge No roads except Mich. Bluff area
Recreational	None	None	None
Geological	None	None	None
Fish and Wildlife	Natural trout fishery	Natural trout fishery	Natural trout fishery
Historical Cultural Other	Historic mining, mining communities Sites are typical of the region. None	Historic mining, mining communities. Sites are typical of the region. None	Historic mining, mining communities. Sites are typical of the region Sensitive plants



POTENTIAL RIVER CLASSIFICATIONS
SEGMENT 1 - WILD
SEGMENT 2 - SCENIC

0 1/2 1
mile



RIVER AREA BOUNDARY

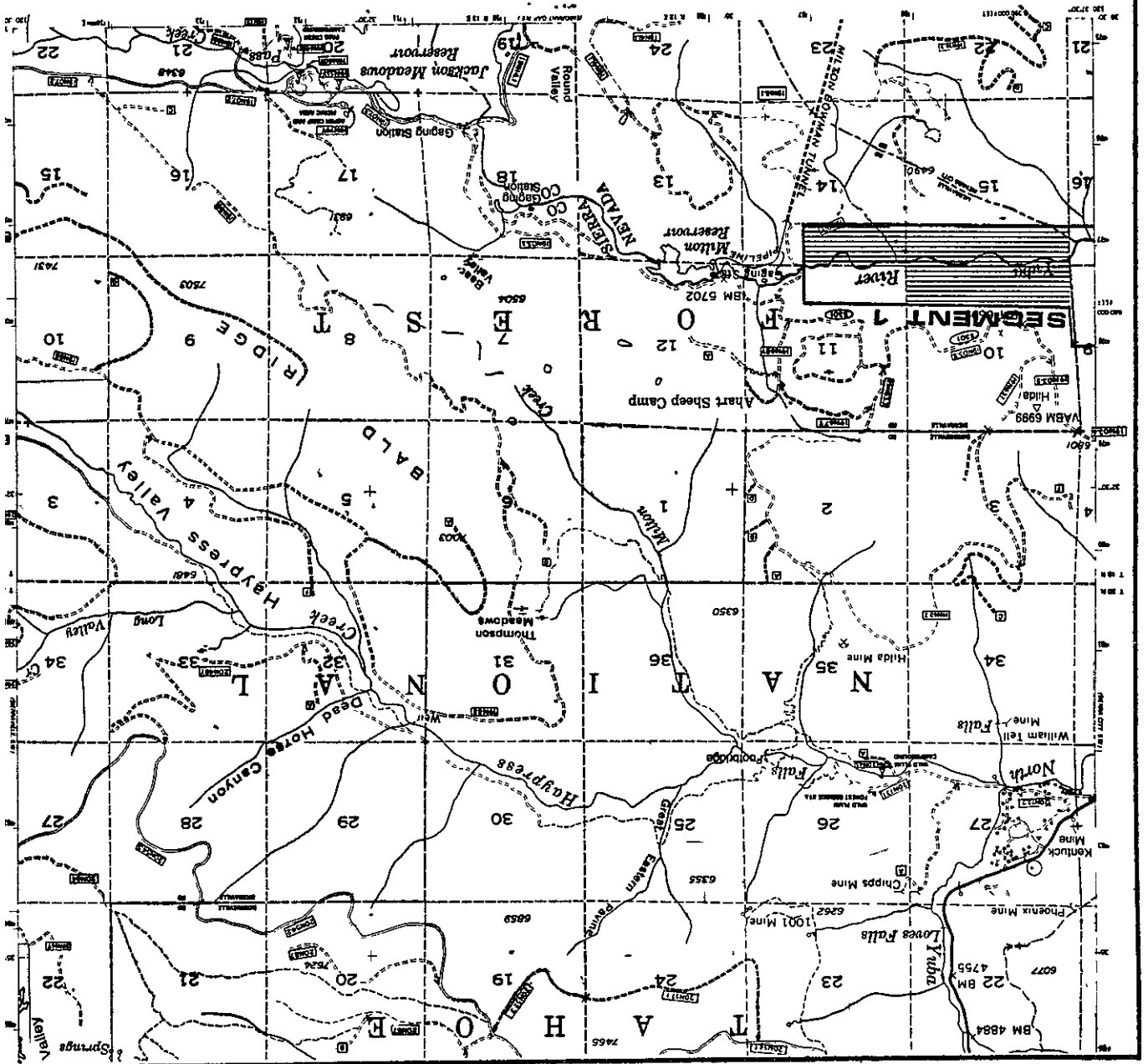
PRIVATE LAND

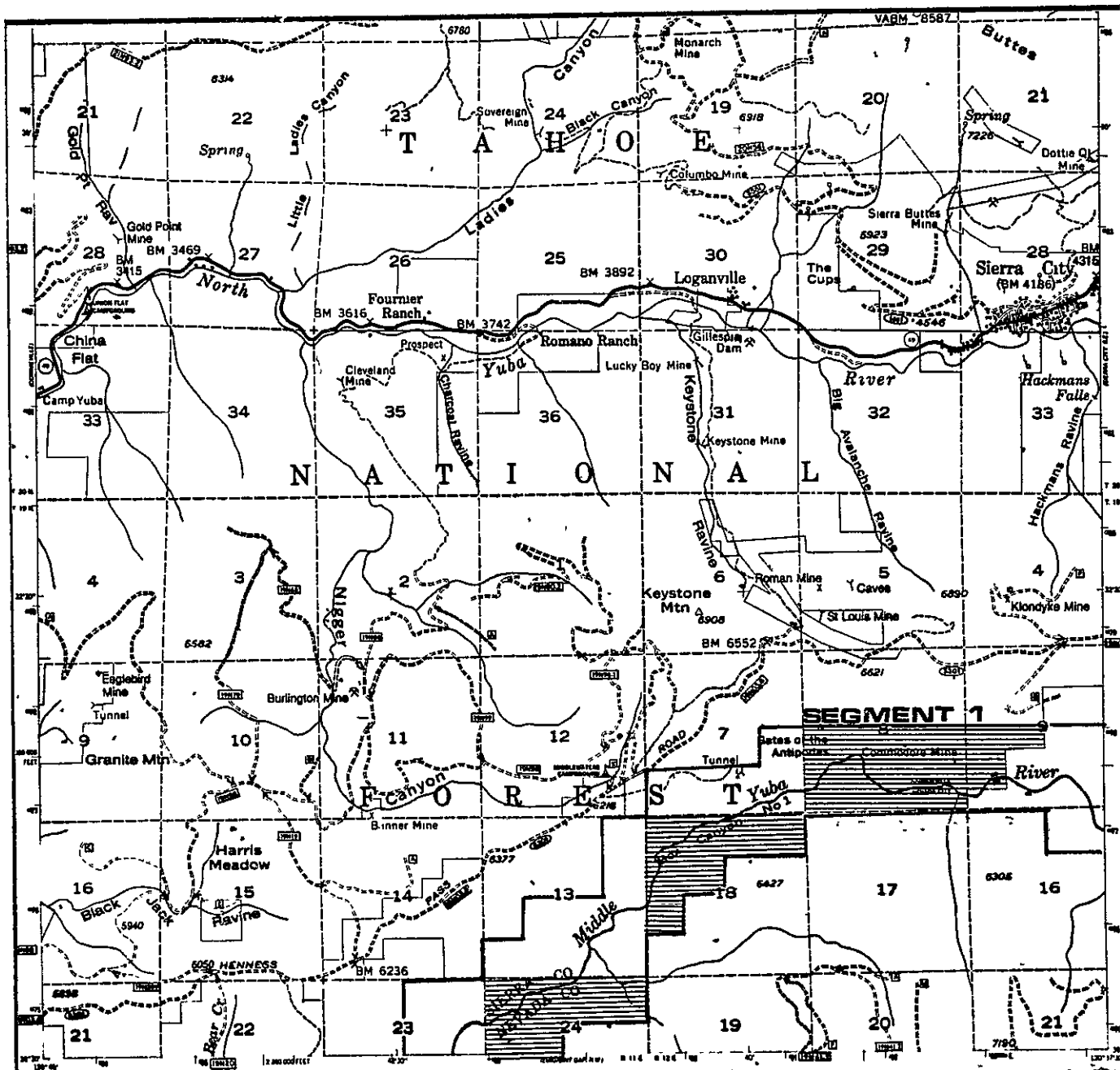
NATIONAL FOREST LAND

APPENDIX I
SHEET 1

U. S. DEPARTMENT
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TAHOE NATIONAL FOREST

MIDDLE YUBA RIVER
INVENTORIED POTENTIAL
WILD AND SCENIC RIVER

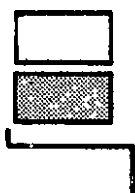




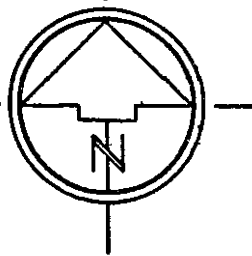
APPENDIX I
SHEET 2

U. S. DEPARTMENT
OF AGRICULTURE
FOREST SERVICE
TAHOE NATIONAL FOREST

NATIONAL FOREST LAND
PRIVATE LAND
RIVER AUEA BOUNDARY



MIDDLE YUEA RIVER
INVENTORIED POTENTIAL
WILD AND SCENIC RIVER

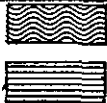


POTENTIAL RIVER CLASSIFICATIONS
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SEGMENT 2-SCENIC

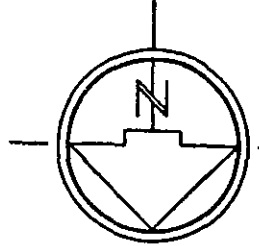




POTENTIAL RIVER CLASSIFICATIONS
SEGMENT 1 - WILD
SEGMENT 2 - SCENIC



0 1/2 1 mile

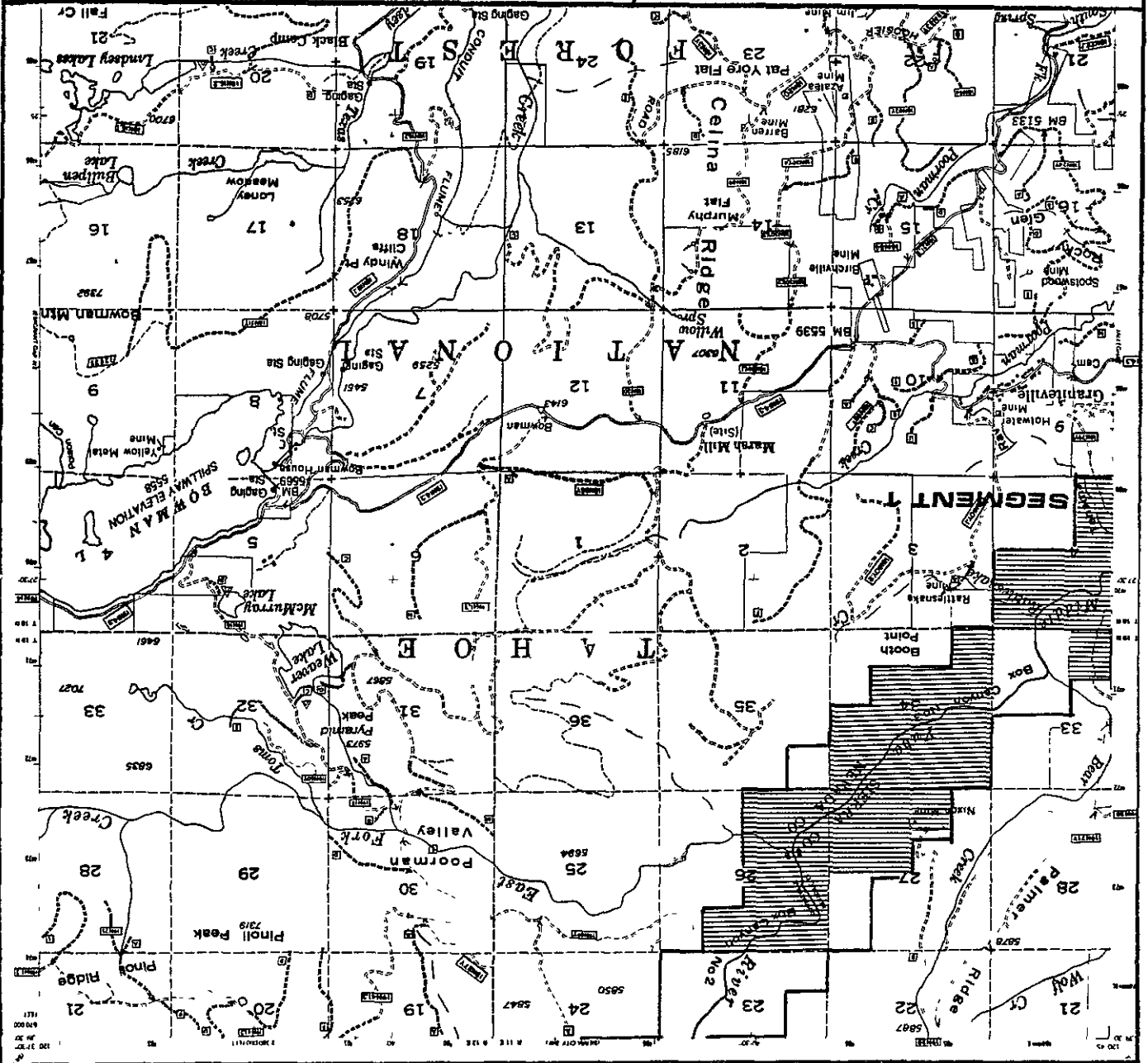


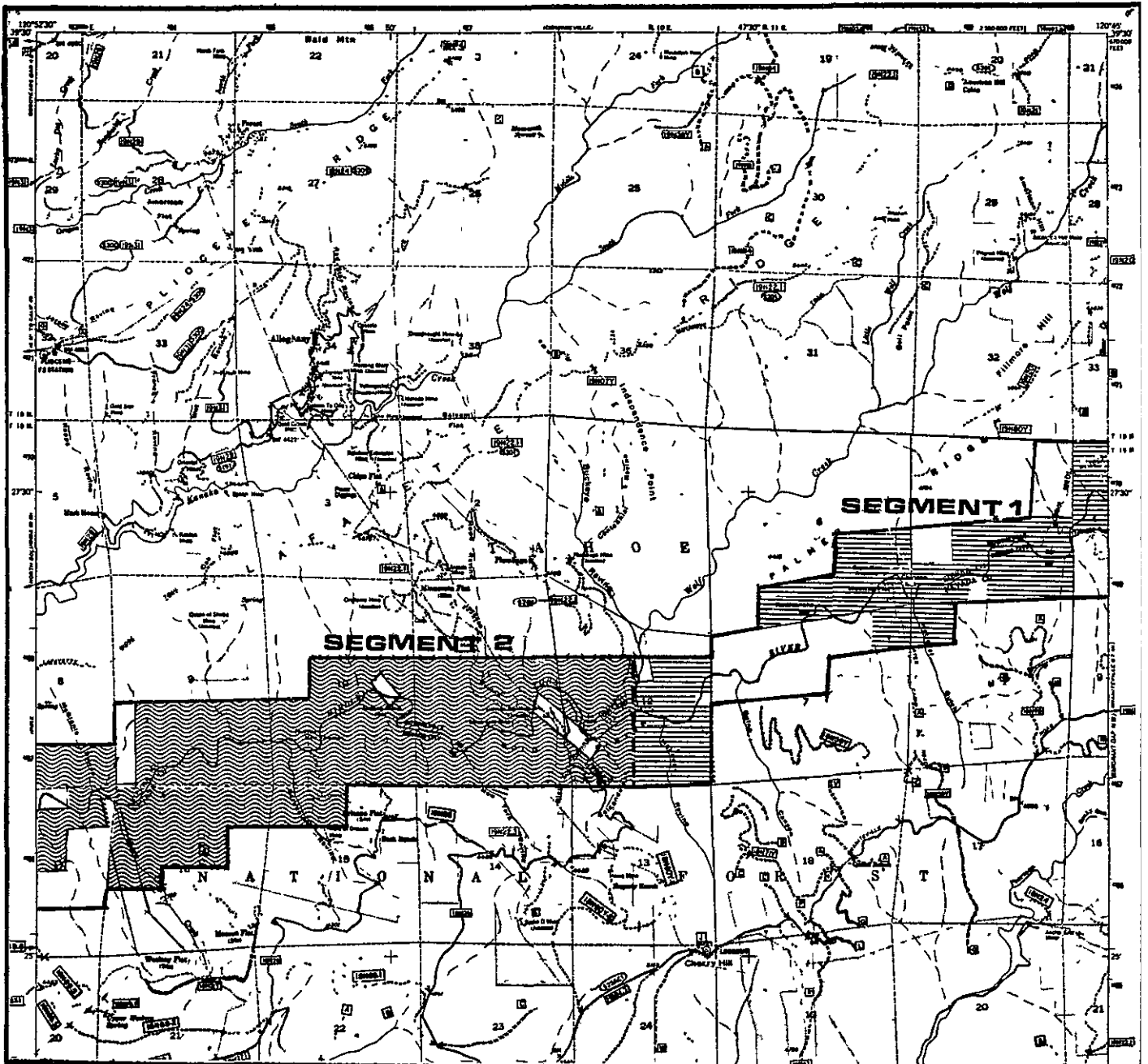
MIDDLE YUBA RIVER
INVENTORIED POTENTIAL
WILD AND SCENIC RIVER

NATIONAL FOREST LAND
PRIVATE LAND
RIVER AREA BOUNDARY

U. S. DEPARTMENT
OF AGRICULTURE
FOREST SERVICE
TAHOE NATIONAL FOREST

APPENDIX I
SHEET 3



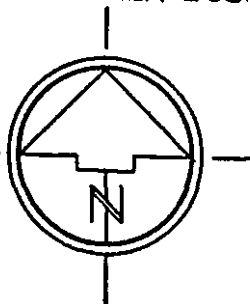


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FOREST SERVICE
TAHOE NATIONAL FOREST

MIDDLE YUBA RIVER
INVENTORIED POTENTIAL
WILD AND SCENIC RIVER

NATIONAL FOREST LAND
PRIVATE LAND
RIVER AREA BOUNDARY



1/2 1 mile

POTENTIAL RIVER CLASSIFICATIONS
SEGMENT 1 - WILD



SEGMENT 2 - SCENIC

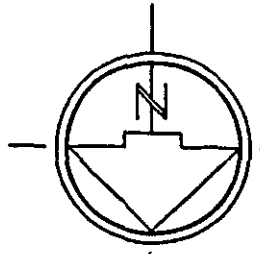




POTENTIAL RIVER CLASSIFICATIONS
SEGMENT 1-WILD
SEGMENT 2-SCENIC



0 1/2 1 mile



MIDDLE YUBA RIVER
INVENTORIED POTENTIAL
WILD AND SCENIC RIVER

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NATIONAL FOREST LAND
PRIVATE LAND
RIVER AREA BOUNDARY

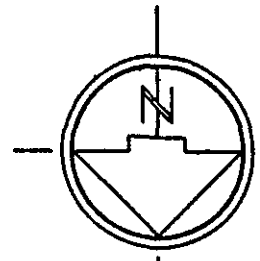
APPENDIX I
SHEET 5





POTENTIAL RIVER CLASSIFICATIONS
SEGMENT 1 - SCENIC
SEGMENT 2 - RECREATION
SEGMENT 3 - SCENIC

0 1/2 1 mile



SOUTH YUBA RIVER
INVENTORIED POTENTIAL
WILD AND SCENIC RIVER

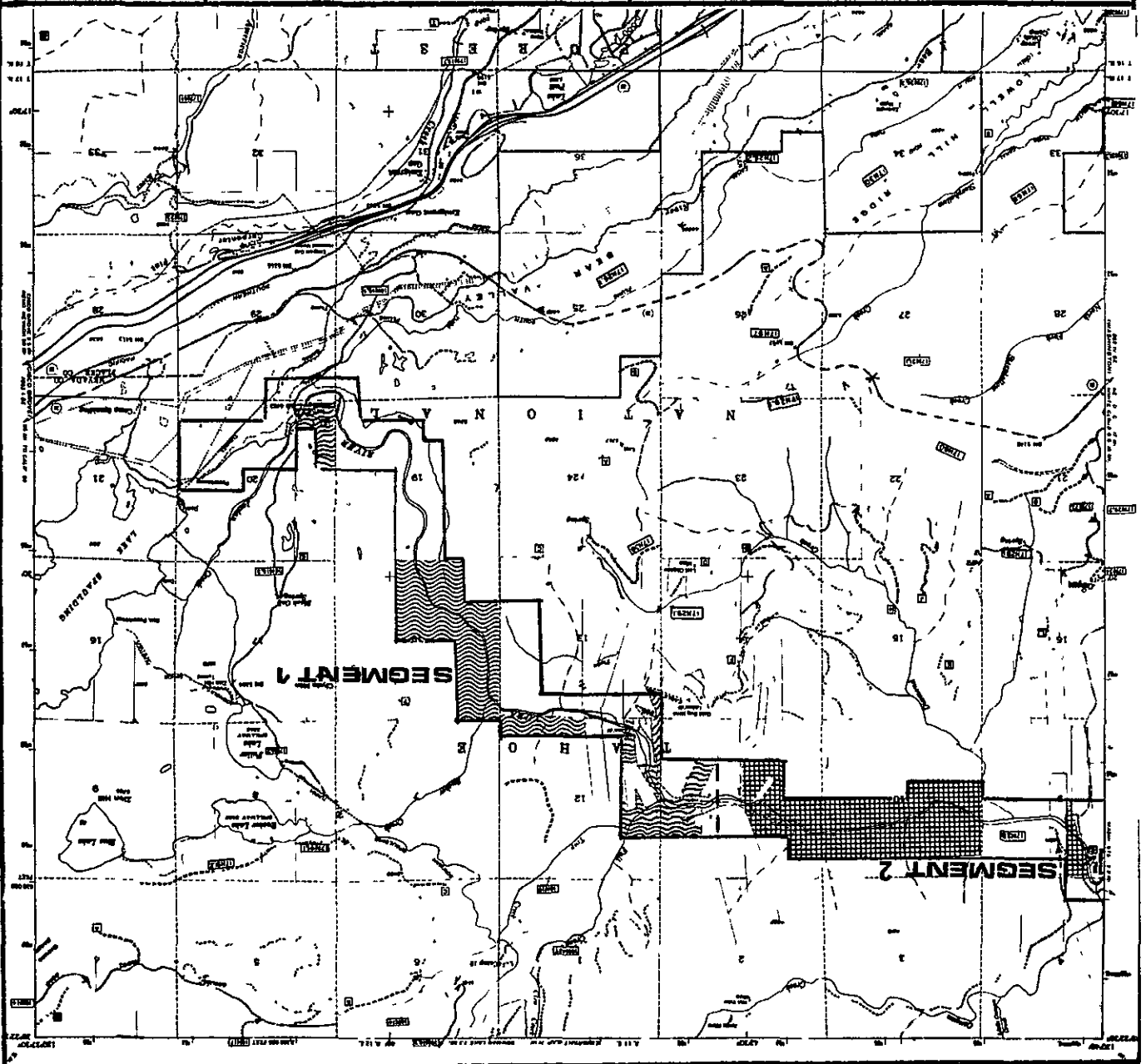
RIVER AREA BOUNDARY

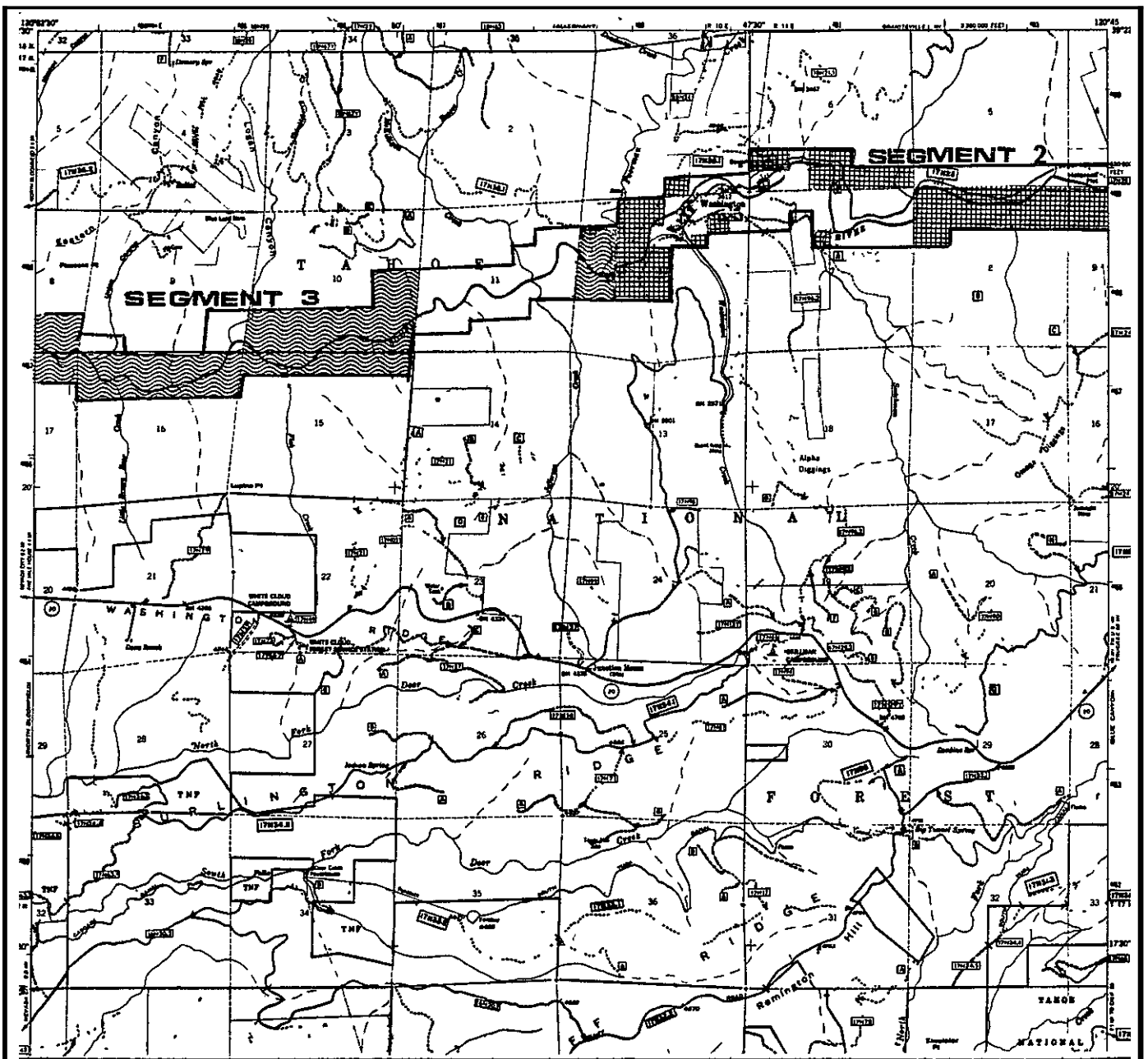


NATIONAL FOREST LAND
PRIVATE LAND

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TAHOE NATIONAL FOREST

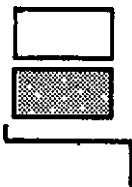
APPENDIX II
SHEET 1



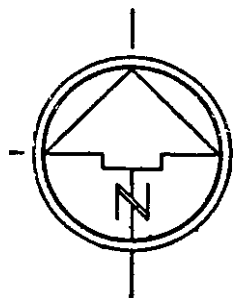


**APPENDIX II
SHEET 2**

NATIONAL FOREST LAND

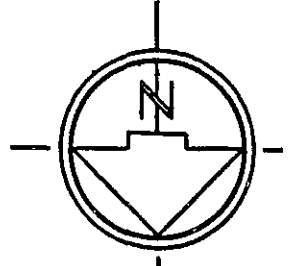


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TAHOE NATIONAL FOREST**





POTENTIAL RIVER CLASSIFICATIONS
SEGMENT 1- SCENIC
SEGMENT 2- RECREATION
SEGMENT 3- SCENIC



RIVER AREA BOUNDARY

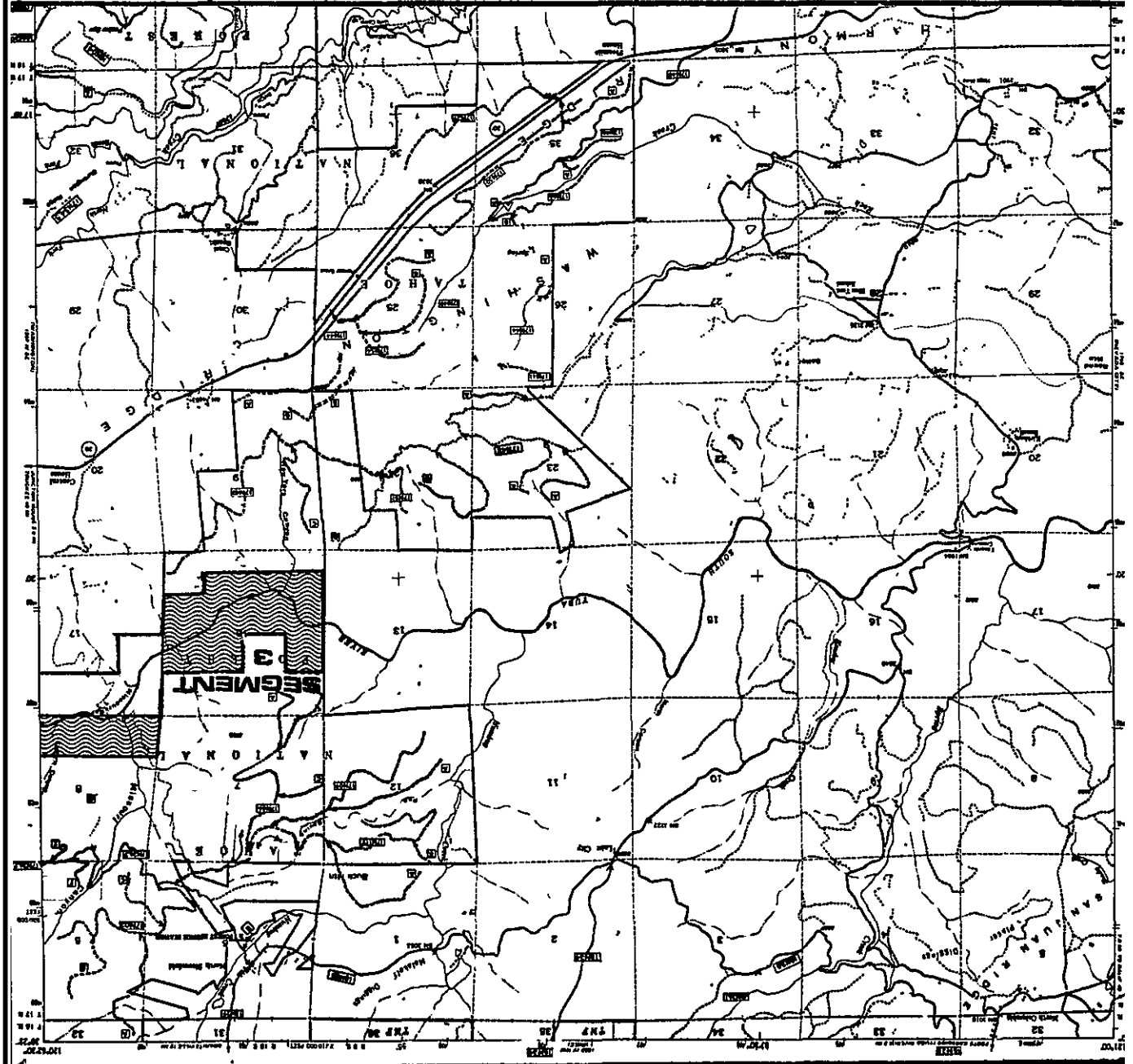
PRIVATE LAND

NATIONAL FOREST LAND

APPENDIX II
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TAHOE NATIONAL FOREST

SOUTH YUBA RIVER
INVENTORIED POTENTIAL
WILD AND SCENIC RIVER



APPENDIX F

CHANGE IN VISUAL CONDITION

Figures F 1 through F 6 illustrate the changes from the Existing Visual Condition (EVC) to the Future Visual Condition (FVC) that would result from each alternative. They show the number of acres that would be in each Future Visual Condition level and the Existing Visual Condition levels from which those acres started. Each figure is divided into five columns corresponding to the five potential FVC levels. The FVC levels are designated at the top of the columns by the Roman Numerals I (most natural, untouched condition) through V (highly altered human-dominated condition). All the blocks of acres in any one column would be in the same FVC in the year 2030. The six blocks within each column correspond to the six different levels of EVC. Thus, the acres in each block represent the acres in that FVC that originated from the EVC level designated to the left of the block.

The figures also show the number of acres in each EVC level and to what visual condition those acres would be changed. The major function of the figures is to trace the future change in the amount of human-made alterations for the lands in each EVC level. Starting with the number of acres with a given level of landscape alterations (EVC Levels I through VI), one can see how many acres would be improved and have less evidence of management activities, how many acres would not be changed, and how many acres would decline in visual condition. All the blocks of acres in any row started out in the same condition in **1982**; how they were altered by the year 2030 is shown by the FVC Roman Numeral above them.

One can determine whether the acres in any block increased, declined, or did not change in visual quality by comparing the EVC Roman Numeral to the FVC Roman Numeral above it. The shaded blocks (at the left end of the rows) in which the FVC Roman Numeral is lower than the EVC Roman Numeral represent acres that would improve in Visual Condition. The white blocks represent acres that would have about the same level of alteration in the year 2030 as in **1982**. The shaded blocks (at the right end of the rows) with FVC Roman Numerals higher than their EVC Roman Numerals would have declined in Visual Condition (have more human-made landscape alterations) by the year **2030**.

Figure F.1: Alternative PRF

Change In Visual Condition from EVC to FVC year 2030

		F V C					
		I	II	III	IV	V	
E V C	I	30674	1233	17226	7626	4455	134
	II	557830	24508	114729	227110	170506	15977
	III	142523	1011	17599	55202	63112	5599
	IV	55152	160	7227	18090	25997	3678
	V	7413		1059	2797	3129	428
	VI	782		260	316	206	

	total VC decline	515423 acres	64.9%
	total VC no change	202589 acres	25.5%
	total VC increase	76362 acres	9.6%
VC decline index		20.63	

Figure F.2 Alternative CUR

Change In Visual Condition from EVC to FVC year 2030

		F V C					
		I	II	III	IV	V	
E V C	I	30674	1233	8840	1837	18630	134
	II	557830	23219	92167	48234	377293	16917
	III	142523	1011	16574	14440	104081	6417
	IV	55152	91	4411	3543	42941	4166
	V	7413		478	1415	5148	372
	VI	782			177	605	

	total VC decline	586549	acres	73.9 %
	total VC no change	151153	acres	19.0 %
	total VC increase	56672	acres	7.1 %
VC decline index		26.40		

Figure F.3 Alternative APA

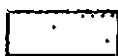


Change In Visual Condition from EVC to FVC year 2030

		F V C					
		I	II	III	IV	V	
E V C	I	30674	1233	17822	1521	9964	134
	II	557830	23219	81952	90453	346465	15741
	III	142523	1011	14201	20326	100771	6214
	IV	55152	91	4884	9343	36716	4118
	V	7413	996	1277	4668	472	
	VI	782	260	97	425		
		total VC decline	593203	acres	74.7%		
		total VC no change	140699	acres	17.7%		
		total VC increase	60472	acres	7.6%		
		VC decline index	25.88				

Figure F.4 Alternative CMD

Change In Visual Condition from EVC to FVC year 2030

		I	II	III	IV	V	
EVC	I	30674	1233	55	3076	26155	134
	II	557830	23844	4820	102470	409131	17555
	III	142523	1011	1220	24139	109512	6641
	IV	55152	91	413	10336	40140	4172
	V	7413		263	1337	5341	472
	VI	782			132	650	

	total VC decline	678932 acres	85.5%
	total VC no change	70804 acres	8.9%
	total VC increase	44638 acres	5.6%

VC decline index 30.19

E V C						VI	V	IV	III	II	I	F V C
						782	7413	55152	142523	557830	30674	
214	2314	16262	58727	122540	1542	IV	V					
347	3554	22910	56331	8080	689	III						
220	1252	13047	23165	402204	27210	II						
160	1011	160	1011	25006	1233	I						
						total VC decline	224851 acres		28.3%			
						total VC no change	476323 acres		60.0%			
						total VC increase	93200 acres		11.7%			

VC decline index 4.07

Change in Visual Condition from EVC to FVC year 2030

Figure F.5: Alternative NMK

Figure F.6: Alternative UNE

**Change in Visual Condition
from EVC to FVC year 2030**

E V C						F V C						
	VI	V	IV	III	II	I		I	II	III	IV	V
	782	7413	55152	142523	557830	30674		1233	17536	10006	1765	134
			160	9087	23179	142669		24508	142669	259608	115608	15977
								1011	23179	69369	43365	5599
											19647	3678
											2359	428
											206	
											316	
											260	

total VC decline	472736 acres	59.5%
total VC no change	233346 acres	29.4%
total VC increase	88292 acres	11.1%

VC decline index 18.42

APPENDIX G

ROADLESS AREA DESCRIPTIONS AND MANAGEMENT

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APPENDIX G

ROADLESS AREA DESCRIPTIONS AND MANAGEMENT

INTRODUCTION

The following is a description of the inventoried roadless areas designated nonwilderness by the California Wilderness Act of **1984** for the Tahoe National Forest (TNF). This appendix includes a description of each area and a description of how each area will be managed.

RARE II Further Planning areas (RARE II area #)

West Yuba - **(5172)** -This area includes a portion located on the Plumas NF.

Granite Chief - **(A 5261)** -This area includes RARE II NW area B **5261** on the Lake Tahoe Basin Management Unit and Management Unit **#8** of the Truckee-Little Truckee Rivers Land Use Plan. The RARE Further Planning (FP) area was divided into a northern and southern portion for analysis in the planning process.

North Fork American River - **(5262)**

East Yuba - **(5264)**

RARE II Nonwilderness areas (RARE II area #)

Duncan Canyon - **(5259)**

Grouse Lakes - **(5260)**

North Fork Middle Fork American River - **(5265)**

Bald Mountain - **(5981)** -This includes a portion located on the Toiyabe NF **(4981)**.

RARE I areas

Middle Yuba -This RARE I area did not meet RARE II criteria. This area has been considered to be in the same status as RARE II FP areas since no recommendation was made on this area for wilderness classification during the RARE II study.

Castle Peak - This area was originally analyzed for wilderness potential in the Truckee-Little Truckee Rivers Land Use Plan Final Environmental Impact Statement.

Lakes (Basin) -This area was originally analyzed for wilderness potential in the Mohawk Land Management Plan Final Environmental Impact Statement. The majority of this area is on the Plumas NF. The Plumas NF will complete the analysis for the entire area, which will be documented in the Environmental Impact Statement for the Plumas National Forest Plan.

There are no RARE II areas on the TNF that were cited under the State of California vs Block **(S-79-523)** lawsuit.

By Regional planning direction, neighboring Forests may elect to have one Forest assume the lead in analysis and decision making on any roadless area overlapping two Forests. The TNF is coordinating analysis of the West Yuba area on the Tahoe and Plumas, the Bald Mountain area on the Tahoe and Toiyabe, and the Granite Chief area on the Tahoe and Lake Tahoe Basin Management Unit. The Plumas is coordinating analysis of the Lakes Basin area on the Plumas and Tahoe. Each Forest has participated in the analysis and decision making for all roadless areas on the Forest, regardless of which Forest is taking the lead.

A joint study agreement is documented in a supplemental agreement to the parent agreement between the Regional Forester, Pacific Southwest Region, and the California State Director, BLM, for the 53 acres of National resource land identified by the BLM wilderness study as CA-040-102. This area is analyzed in conjunction with the North Fork American River RARE II FP area. In early 1983, the Secretary of the Interior, upon recommendation from the Interior Board of Land Appeals, removed this area from wilderness study area (WSA) status since it was smaller than 5,000 acres. Since analysis was already completed on the area by the TNF planning process, the BLM area is still included in this analysis as part of the North Fork American River (NFAR), although the BLM is no longer required to study and report this area to Congress under Section 603 of FLPMA. The BLM area is analyzed as part of the NFAR as a way of improving manageability of the NFAR.

The Truckee-Little Truckee Rivers Land Use Plan Management Unit #8 is included as part of the Granite Chief area since the direction in that Plan is to allow no activities on TNF land which would detract from its roadless character until it can be analyzed for its wilderness potential in conjunction with the entire Granite Chief roadless area.

The following descriptions of the roadless areas were developed as part of the TNF land management planning process. The information in these analyses has been summarized and placed in Table G.1, entitled Roadless Area Major Resource Emphasis Assignments by Alternative. It is provided for the reviewer as a summary of the resource allocation of each roadless area by alternative.

The objective of the Forest planning process is to resolve the status of all inventoried roadless areas. All areas are to be allocated to some intensity of multiple use management; none will be left in a further planning status. Additional information, including maps of individual areas, documents, and various working papers retained from the earlier RARE II process, are on file and available for public inspection at the Forest Supervisor's Office, Nevada City, California.

PROPOSED MANAGEMENT FOR ROADLESS AREAS

Based on the PRF alternative direction, the following roadless areas will be managed as follows:

West Yuba About 30 percent of the area will be managed for semi-primitive motorized recreation opportunities. The rest of the area will be managed for roaded natural dispersed recreation and timber management. Approximately 30 percent of the remaining area will be managed for a visual/timber emphasis and the other 40 percent for a timber/range emphasis.

Granite Chief. Seventy-four percent of the area is already in the Granite Chief Wilderness. The remaining area is primarily managed for SPNM recreation opportunities (18 percent) with six percent managed for timber harvest along the western boundary and two percent reserved for Research Natural Area (study) status.

North Fork American River: A majority of the North Fork area will be managed for primitive and semi-primitive recreation opportunities. The Wild and Scenic River (17 percent of the area) will be managed for primitive recreation opportunities. Forty-eight percent of the area on both sides of the Wild River will be managed for SPNM recreation opportunities and an additional 17 percent will be managed for SPM recreation opportunities in the Loch Leven and Long Valley areas. An additional two percent of the area will be managed as a Research Natural Area at Sugar Pine Point. The remaining 13 percent of the area will have a timber/range emphasis concentrated on the upper slopes on the south side of the North Fork American River.

East Yuba. Almost half (48 percent) of the East Yuba area will be managed for SPM recreation opportunities. The remaining area will be managed for timber with 32 percent having a timber/visual emphasis and the remainder (20 percent) having a timber/range emphasis.

Middle Yuba: Over three quarters (76 percent) of the Middle Yuba will be managed for SPM recreation opportunities. The remaining 24 percent of the area will have a timber/range management emphasis.

Grouse Lakes: Most of the Grouse Lakes area (90 percent) will be managed for SPNM recreation opportunities. An additional three percent will be managed for SPM recreation opportunities. The remaining seven percent of the area has a timber/range management emphasis.

Bald Mountain: Most of the Bald Mountain area will be managed under a timber/range emphasis (55 percent). The remaining 15 percent will be managed as a Research Natural Area (Babbitt Peak).

Duncan Canyon: A small area (seven percent) of Duncan Canyon will be managed for SPNM recreation opportunities near Robinson Flat. The rest of the area will be managed with a timber/visual emphasis (93 percent).

North Fork of the Middle Fork American River: Most of this area (90 percent) will be managed for SPM recreation opportunities. About two percent will be managed as a Special Interest Area at Grouse Falls. Another five percent will have a fish and wildlife habitat emphasis while still allowing for other commodity production in the southernmost part of the area. The remaining three percent of the area will have a visual/timber emphasis as seen from major highway corridors.

Castle Peak Castle Peak is dedicated to recreation with 93 percent managed for SPM recreation opportunities and seven percent managed for cross-country and downhill skiing opportunities.

Lakes (Basin): All of ~~Lakes~~ Basin will be managed for SPM recreation opportunities.

The individual discussion of each roadless area begins on the page shown below:

West Yuba	G.5
Granite Chief	G.7
North Fork American River	G.10
East Yuba	G.12
Middle Yuba	G.13
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North Fork Middle Fork American River	G.20
Castle Peak	G.22
Lakes (Basin)	G.24

TABLE G . I- ROADLESS AREA MAJOR RESOURCE ASSIGNMENTS BY ALTERNATIVE (PERCENTAGE OF AREA AND MANAGEMENT PRESCRIPTION) 1/

INVENTORIED ROADLESS AREA	PRF	CUR 2/	RPA	CMD	NMK	UNE
West Yuba 3/	30% - #3 30% - #15 40% - #13	100% - #13	100% - #13	100% - #13	100% - #2	30% - #3 30% - #15 40% - #13
Granite Chief 3/	74% - #1 2% - #5 6% - #13 18% - #2	100% - #3	100% - #14	74% - #1 20% - #2 6% - #13	74% - #1 15% - #5 11% - #2	74% - #1 18% - #2 2% - #5 6% - #13
North Fork 4/ American River	48% - #2 17% - #3 17% - #6 16% - #13	90% - #13 10% - #6	50% - #2 10% - #6 40% - #13	17% - #6 2% - #5 81% - #13	86% - #2 10% - #6 4% - #5	48% - #2 17% - #3 17% - #6 16% - #13
East Yuba	48% - #3 20% - #13 32% - #15	100% - #13	15% - #2 85% - #13	100% - #13	71% - #2 29% - #5	48% - #3 20% - #13 32% - #15
Middle Yuba	76% - #3 24% - #13	100% - #13	100% - #13	100% - #13	100% - #2	76% - #3 24% - #13
Grouse Lakes	90% - #2 7% - #3 3% - #13	100% - #3	75% - #2 20% - #13 5% - #15	90% - #2 10% - #13	100% - #2	90% - #2 7% - #3 3% - #13
Bald Mtn 3/	15% - #5 85% - #13	85% - #13 15% - #5	95% - #13 5% - #15	15% - #5 85% - #13	85% - #2 15% - #5	15% - #5 85% - #13
Duncan Canyon	93% - #15 7% - #2	100% - #13	100% - #13	100% - #13	100% - #2	93% - #15 7% - #2
North Fork of Middle Fork of American River	90% - #3 2% - #5 5% - #7 3% - #8	100% - #13	5% - #7 95% - #13	2% - #5 93% - #13 5% - #7	98% - #2 2% - #5	90% - #3 2% - #5 3% - #8 5% - #7
Castle Peak	93% - #3 7% - #11	100% - #3	90% - #2 10% - #13	90% - #13 10% - #15	99% - #2 1% - #5	93% - #3 7% - #11
Lakes (Basin)	100% - #3	100% - #13	100% - #2	100% - #13	100% - #2	100% - #3

WEST WBA

#5172 (RARE II Further Planning) 16,601 net TNF acres, 16,639 gross acres; 6,347 net PNF acres, 6,347 gross acres. See Figure G-1.

This area is situated north of Downieville and west of Craycroft Ridge in the Rattlesnake Creek drainage contiguous to the Plumas National Forest Roadless Area in the Table Rock and Skyhigh area.

Approximately 4,300 acres located on the Tahoe National Forest are within Management Unit 7 of the Mohawk Land Use Plan which allocated this area to further planning for wilderness or other multiple use management. This area was previously identified as the Beartrap inventoried roadless area (IRA) in RARE I. The Beartrap IRA was expanded by RARE II and renamed West Yuba. The 6,347 acres (net and gross) that are on the Plumas National Forest are also described and displayed in this analysis.

A series of peaks (Fir Cap, Saddleback, Mt Alma, Democrat Peak, and Deadwood Peak) form the western boundary of the area. Craycroft Ridge marks the eastern boundary. The southern boundary roughly follows a line drawn between the former town of Monte Cristo and Craycroft Diggins. The northern boundary encompasses the canyon lands (Canyon Creek drainage) in the vicinity of Table Rock, Skyhigh Peak, Stafford Mountain, Beartrap Mountain, and Gibraltar Peak.

Elevations range 3,600 to 6,800 feet. Sixty-four percent of the unit has slopes over 50 percent. Thirty percent of the area is within sensitive watershed lands. Annual precipitation averages about 75 inches; precipitation is primarily in the form of snow on the 78 percent of the area above 5,000 feet and primarily as rain below that elevation.

The Downie River, Rattlesnake Creek, and Canyon Creek are the major streams in the area. There is a total of 45 miles of perennial streams. Water quality is very high. The terrain is dissected with steep canyons and narrow sinuous ridges characterize most of the area.

The vegetation is representative of the Sierran Forest Province (Bailey classification M2610) with primarily a mixed conifer forest community (Kuchler Vegetation Type 005).

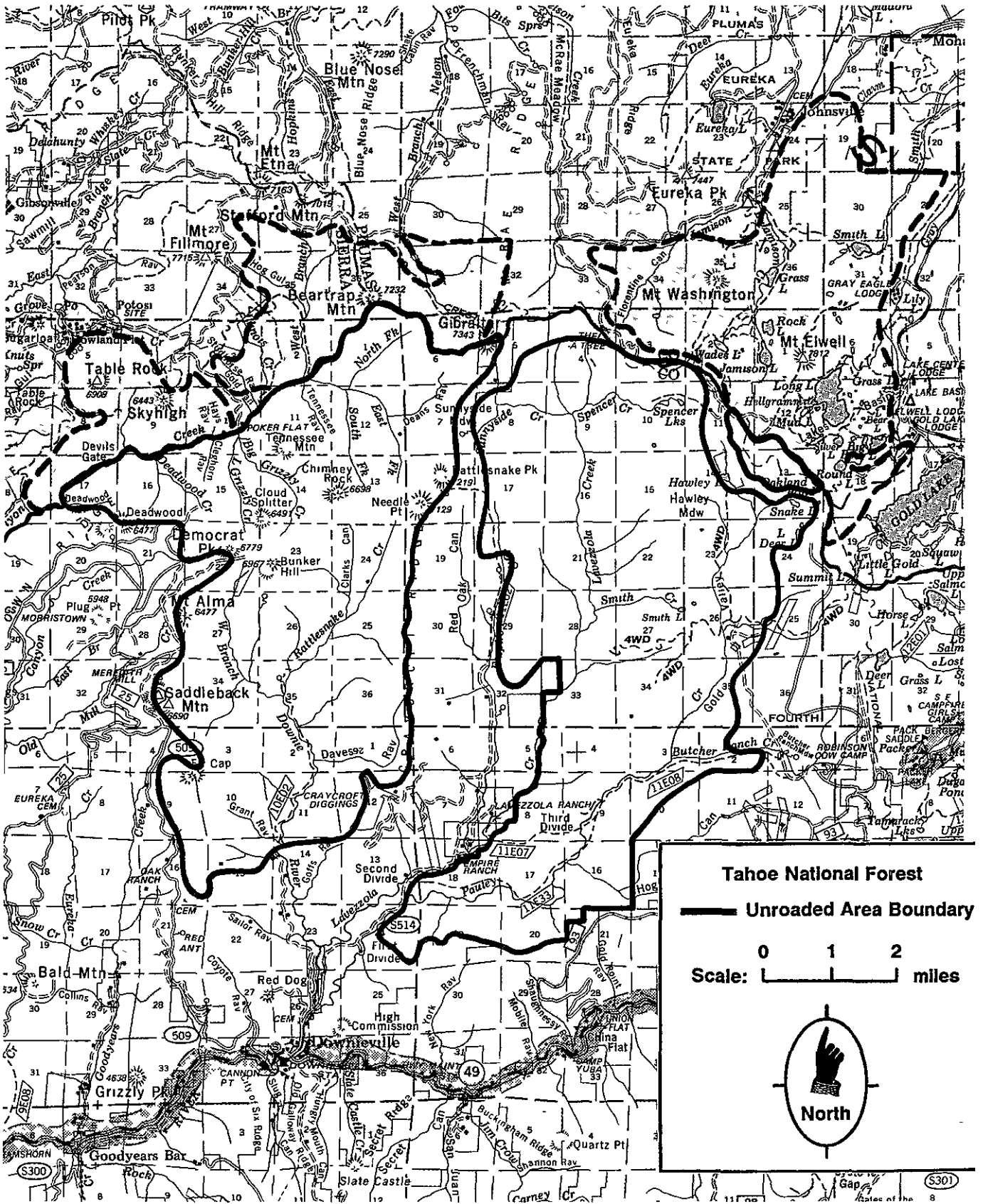
The area contains 9,671 acres of mixed conifer and 2,249 acres of red fir forest types. This forested land is scattered throughout the entire area. The remaining acres consist of hardwoods, brush, riparian vegetation, barren areas, and other nonforested land. There are 680 acres of wetlands, comprising four percent of the area.

The West Yuba area has high scenic quality throughout most of the area. Seventy seven percent of the area is in variety class 'A', which is highly distinctive landscape. The remaining 23 percent is common variety class 'B' landscape. (Most of the less scenic lands are in the southern portion of the area.)

The amount of alteration of the existing visual condition of the area varies. Less than 1 percent is EVC class I (untouched), 75 percent is class II (not noticeably altered), 14 percent is class III (alterations visible but not dominant), and 10 percent is class IV (dominated by alterations). Overall, a natural condition predominates.

There is much evidence of historic mining which has occurred during the past 100 years. Such evidence exists as roads, mine shafts, diggings, old buildings, and tailings. The historic town of Poker Flat, which Bret Harte wrote about in the 'Outcast of Poker Flat', is located in the northern portion of this area. There are numerous active mining claims throughout the area. Geological studies for this area indicate moderate to high potential for the discovery of valuable minerals.

Figure G.I: East Yuba, West Yuba and Lakes Basin Roadless Areas



The main attractions to the area are the stream bottoms and mountain peaks that create a variety of scenery.

Hunting, hiking, and fishing *are* the primary recreation uses of the area. There is OHV use associated with hunting throughout the area. The Poker Flat and Saddleback Ridge areas are also popular for summer OHV use. Annual recreation visitor days total 145,900 for the area. A portion of one cattle allotment is within the area.

National Forest System lands surrounding the West Yuba area are primarily managed for timber production, and heavily prospected and mined for valuable minerals.

GRANITE CHIEF

#A5261 (RARE II Further Planning) - **25,975** net TNF acres, **35,572** gross acres; - ~~B5261~~ (RARE II nonwilderness) **1,243** LTBMU acres - **1,243** gross acres: Management Unit #8, Truckee-Little Truckee Rivers Land Use Plan - 2,407 net TNF acres, 3,197 gross acres; **18,705** net TNF acres designated wilderness in 1984. See Figure G-2.

Note: This writeup describes the entire roadless area, including the 16,705-acre portion designated the Granite Chief Wilderness in 1984.

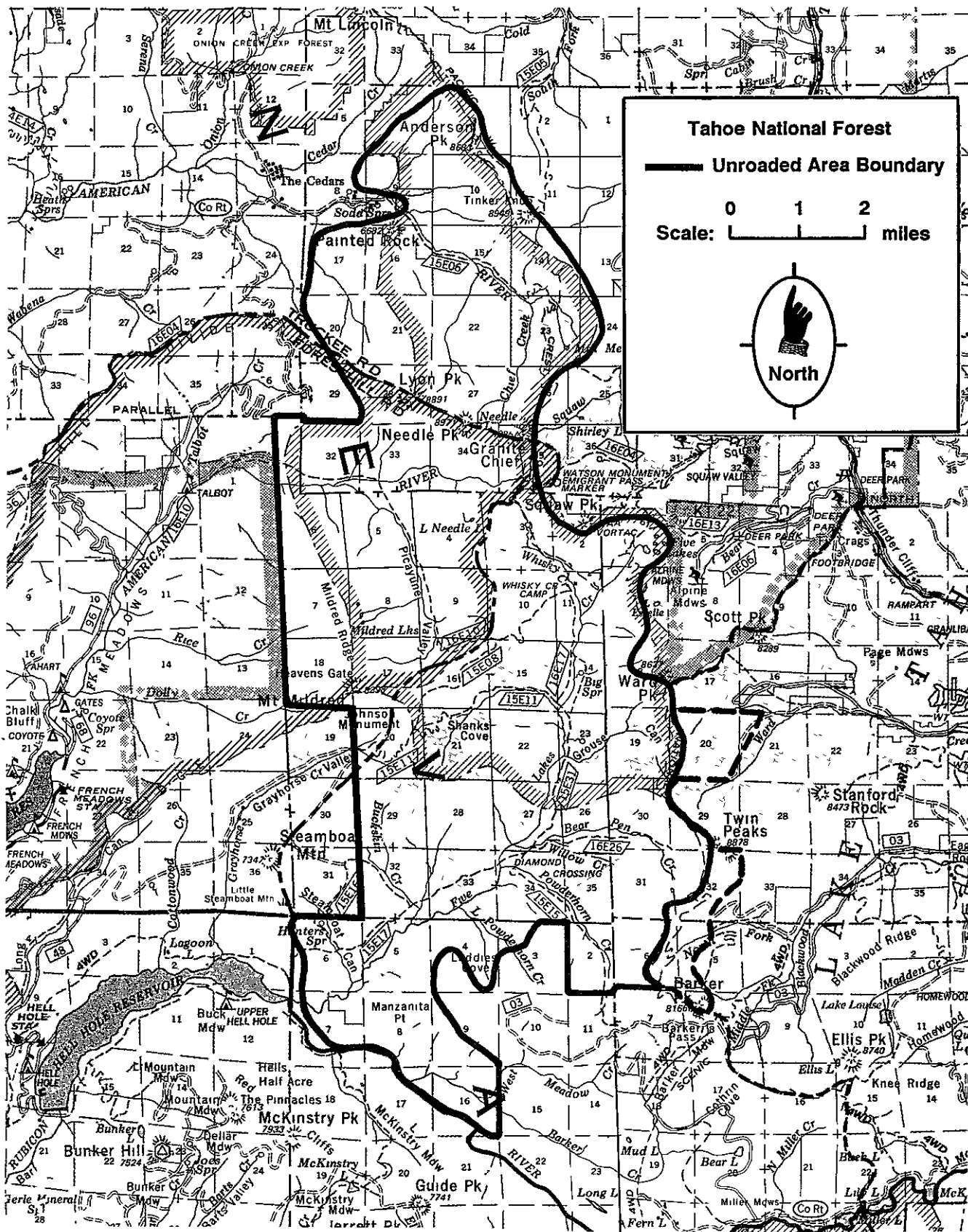
This area is located adjacent to the western watershed boundary of Lake Tahoe on the Truckee and Foresthill Ranger Districts. A small portion (1,243 acres) is located within the Lake Tahoe Basin Management Unit (LTBMU). This small area was recommended for nonwilderness (NW) in the RARE II FEIS. The area on the TNF was recommended for Further Planning (FP). The Wilderness Act of 1984 designated 18,705 acres to the Granite Chief Wilderness. The area east of the Sierra Crest was included in the Truckee-Little Truckee Rivers Land Use Plan, but land allocation was deferred until the area (Management Unit #8) could be analyzed as part of the entire Granite Chief Roadless Area. Management direction in Unit #8 is to allow no discretionary activities on National Forest System lands which would detract from its roadless character until it can be analyzed for wilderness potential in conjunction with the entire Granite Chief roadless area.

Elevations range from 5,000 to 8,800 feet. Twenty-seven percent of the unit has over 50 percent slopes. Forty percent of the area is within sensitive watershed lands. There are 49 miles of perennial streams. Precipitation averages 70 inches annually, the great majority occurring as snow. Water quality is very high.

The appearance of the Granite Chief area consists of a varied landscape of forest, meadows, and glacially exposed granitic landscapes. The area has high scenic value because of this variety. The major streams in the area are Five Lakes Creek and the headwaters of the North Fork and the Middle Fork of the American River. The topography varies from steep granitic cliffs interspersed with broad glaciated valleys in the north, to dissected landforms in the south. The most scenic class of landscapes, variety class A, comprises 98 percent of the northern part of the area, with the remainder falling in variety class B (common landscapes). The southern portion has a slightly lower proportion of variety class A (83 percent) and more variety class B (17 percent). Granite Chief Unit 8 is 98 percent variety class A and 5 percent variety class B.

The existing visual condition of the area is predominantly without visible alterations, although it is not totally pristine. In the north and in Unit 8 of the Truckee-Little Truckee Rivers Land Use Plan virtually all the area still appears natural (EVC class II). In the southern part, 12 percent is EVC class I (untouched), 83 percent is class II (natural, no noticeable alterations), 4 percent is class III (visible alterations but still predominantly natural) and, as in the north, there is a trace of class IV (alterations dominate).

Figure G.2: Granite Chief Roadless Area



The vegetation represents the Sierran Forest province (Bailey classification M2610), with primarily a coniferous forest community composed of deciduous and evergreen woodlands at lower elevations. The Kuchler vegetation type is Red Fir Forest (007). The area on the Tahoe NF contains 4,015 acres of mixed conifer, 12,425 acres of red fir, and 430 acres of lodgepole pine forest types. This forested land is concentrated in the southern portion of the area. The remaining 8,405 acres consist of aspen, riparian vegetation, brush, barren, and other nonforested land, primarily north of Whisky Creek Camp. There are 1,920 acres of wetlands comprising eight percent of the area. The area on the LTBMU contains 283 acres of mixed conifers, 111 acres of red fir, 153 acres of hemlock and lodgepole, and 696 acres of nonforested land. Most of the area was also included in the RARE I inventory. Sierra Pacific Industries is the major private landowner in this area. The company plans to intensively exchange their lands for timber production and have, in the past, received approved timber harvest plans from the State. They have also received non-cost-share road easement for access to their lands in the Five Lakes Creek drainage.

The east side of the area is bordered by electronic sites, roads, ski areas (ski lift terminals), and logged over lands. Portions of the west side are bordered by private lands logged in the past.

The northern portion of the area (north of Bear Pen Creek) is currently managed as a motor vehicle closure area. This vehicle closure area was established on April 15, 1970, by the PSW Regional Forester. A majority of the area is unsuited for OHV use due to steep topography and sensitive watershed lands. The Pacific Crest National Scenic Trail is located along the eastern boundary. A large sheep allotment is located in this area. There are no known mining claims in the area.

The southern portion of the area (south of Bear Pen Creek and the vehicle closure area) is 'Designated Routes Only' for OHV use. The Powderhorn Trail has been used in the past by OHV enthusiasts. This area is in an alternate ownership pattern, with the major private landowner being Sierra Pacific Industries. None of the private land is accessed or harvested. There are fences, some buildings, and meadow restoration structures throughout the area. There is less landscape variety in this area than in the northern section. There are four power withdrawals in the Five Lakes Creek area and along the headwaters of the Middle Fork of the American River. Sheep and cattle grazing occurs within portions of the area.

The portion of the LTBMU, recommended for nonwilderness in RARE II, is in two equal-sized parcels. The northern parcel is in Ward Valley. Alpine Meadows Ski Area does avalanche control in this area. The southern parcel is at the headwall of Blackwood Canyon and shows signs of the overgrazing that occurred prior to 1950. Blackwood Creek does not meet water quality standards because of past logging, grazing, and quarry operations. The Forest Service plans to restore the over-grazed area, including that in the roadless area, as part of the watershed restoration backlog.

Recreation use in the area totals approximately 65,500 RVDs per year. The area is used primarily by hikers, fishermen, and hunters, with some OHV use in the southern portion. Approximately 3.5 miles of trail is used for the annual Tevis Cup 100-Mile Endurance Ride. The Western States Endurance Run and the Capital-to-Capital Endurance Ride are within the roadless area boundaries. The Tevis Cup Ride has occurred traditionally every year since 1954.

The major attractions of this area are the high, rugged granitic cliffs and broad glaciated valleys found in the northern portion. The numerous streams distributed throughout the area provide opportunities for fishing, camping, and sightseeing. The abundance of game and nongame animals also attracts a large number of visitors. Portions of a State game refuge extend into the area and consist of all of Picayune Valley, Little American Valley, and the west slope of Mt. Mildred.

NORTH FORK AMERICAN RIVER

#5262 (RARE II Further Planning) **34,275** net TNF acres, 50,669 gross acres. See Figure G-3.

This area is situated on both sides of the North Fork American River. The North Fork American Wild River that was designated by Congress contains approximately **5,800** acres of National Forest System land and is included within and surrounded by the roadless area. The area extends from the western forest boundary near Giant Gap to approximately **1 1/2** miles *east* of Heath Springs, and is located within the Foresthill, Truckee, and Nevada City Ranger Districts. Most of this area was identified as a Wilderness Study Area under RARE I; it was identified for further planning in the RARE II Environmental Impact Statement (EIS).

Sixty-two percent of the unit has slopes over 50 percent. Twenty-seven percent of the area is composed of slopes greater than **70** percent. There are **84** miles of perennial streams. Water quality is very high. Annual precipitation ranges from 50 inches near Colfax to over **80** inches in the Cherry Point area; most of this occurs as rain below 5,000 feet, and snow above that elevation.

The area contains **14,831** acres of muted conifer, **4,256** acres of red fir, and **555** acres of lodgepole pine forest types. The vegetation is representative of the Sierran Forest Province (Bailey Classification **M2610**) with both muted conifer and red fir forest communities (Kuchler Vegetation Types 005 and 007). This forested land is concentrated in the southeastern and southwestern portions of the area around Sailor Meadow and Humbug Canyon. The remaining acres consist of hardwoods, brush, barren areas, riparian vegetation, and other nonforested land. There are **1,220** acres of wetlands, comprising four percent of the area. Some sheep graze in the eastern portion of the area. Livestock graze a portion of three grazing allotments. Elevation ranges from **2,100** feet in the Giant Gap - Green Valley area to 8,000 feet at Snow Mountain. The river is designated as a Wild Trout Stream by the California Department of Fish and Game.

The **natural** Scenic quality (variety class) of the area (not including the designated Wild River) is predominantly distinctive, although a large portion is common in nature. Sixty-seven percent of the area is highly scenic variety class 'A' land, **33** percent is variety class 'B' land with average scenic quality, and a trace is variety class 'C' land within minimal scenic quality.

The degree of current human-caused alterations of the natural landscape (existing visual condition) within the area covers a full range from pristine landscapes to those totally dominated by unnatural alterations. Nine percent of the area is untouched in appearance (EVC class I), 78 percent has no noticeable alterations (EVC class II), and **11** percent is predominantly natural (EVC class III), and **2** percent is dominated by alterations (EVC Class V). Despite this range, the overall appearance of the area remains overwhelmingly natural in character.

The northern two-thirds of the area has an alternate ownership pattern. Sierra Pacific Industries is the major private landowner and plans to intensively manage some of their parcels for timber production. They have applied for a non-cost-share road easement to access their lands in the Long Valley area.

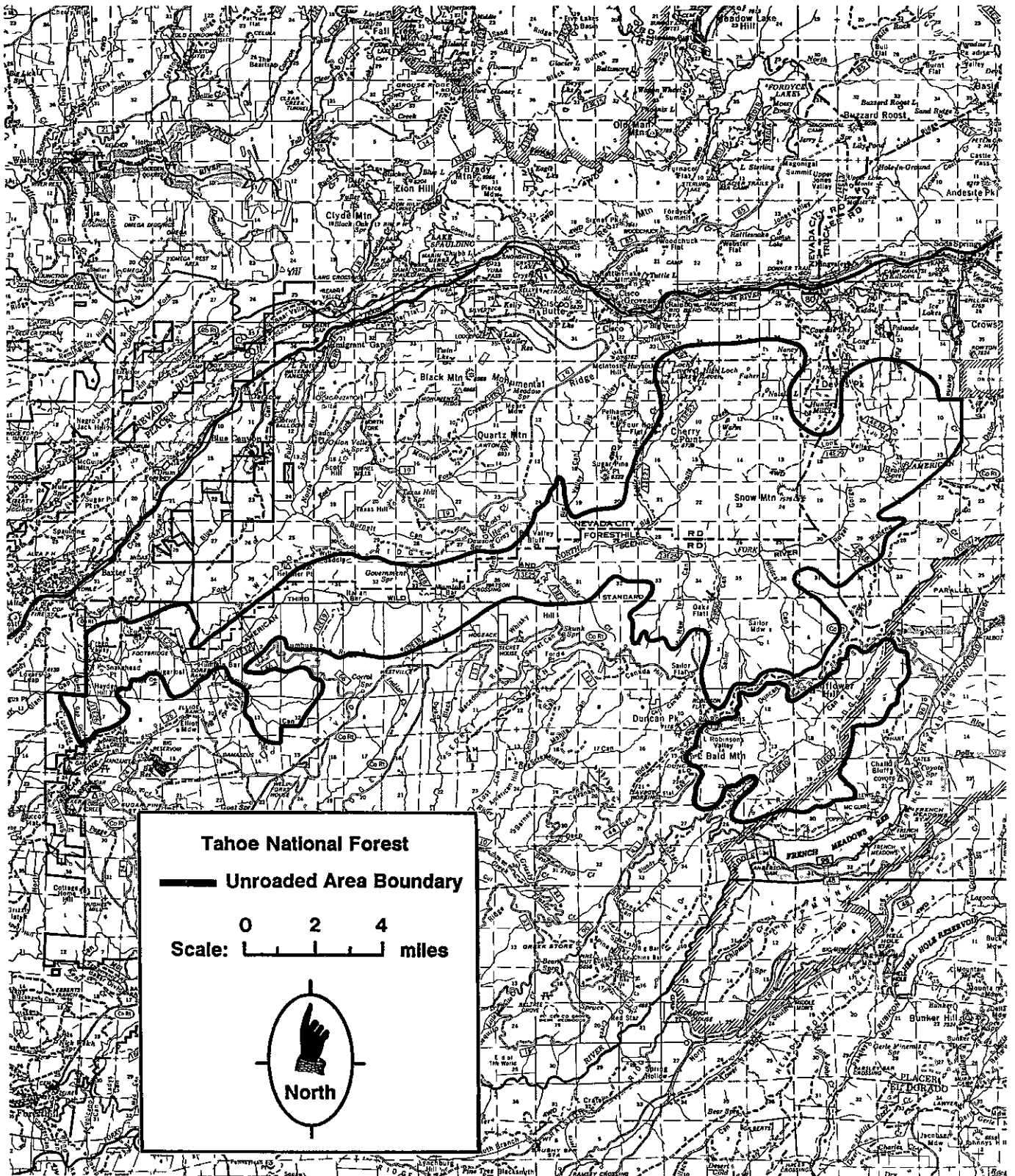
There have been over **2,000** mining locations filed within this area over the years (Bureau of Mines study). Some of these locations are within the Wild River, which was withdrawn from mineral entry in **1975**. There are **14** claims that pre-date the withdrawal.

Hiking, fishing, and hunting are the primary recreation uses of the area. Use totals 46,600 visitor days annually.

The main attractiveness of this area is the North Fork American Wild River, which is protected under the Wild River Act. Other areas include the high-elevation lakes in the Loch Leven and Huysink Lakes area, which are sensitive to heavy, extended use by man.

National Forest System lands surrounding the area are primarily managed for timber production.

Figure G.3: North Fork American River and Duncan Canyon Roadless Areas



EAST YUBA

#5264 (RARE II Further Planning) - 18,502 Net TNF Acres, 18,623 Gross Acres. See Figure G-1.

This area is on the Downieville Ranger District, bordered by the Plumas National Forest boundary in the Laveuola Creek drainage The Lakes Basin (Unit No. 1 of the Mohawk Land Management Plan, Plumas and Tahoe National Forests) is contiguous to the northeast corner. The 'A' Tree Road and a road down Empire Creek form the western boundary of this area. These are controversial travelways to both OHV users and SPNM proponents. The eastern boundary is the old Primrose Timber Sale. The western boundary is roaded from the 'A' Tree Road through Cowell Mine into Empire and Lavezzola drainages. The eastern portion of this area is accessed by OHV routes that receive heavy use. Elevations range from 3,600 to 7,240 feet and about 78 percent of the area is over 5,000 feet in elevation. An average of 70 inches of precipitation falls annually, most of it as snow.

The topography of the area is similar to that found in the West Yuba area (steep canyons and narrow ridges) except for the eastern portion, which is an area of glacially scoured rock with small lakes and meadows interspersed. Forty-nine percent of the area has over 50 percent slopes. Laveuola, Spencer, Pauley, and Smith Creeks are the major streams and are all tributaries to the North Yuba River. There are about 42 miles of perennial streams and lakeshore. Water quality is very high. There are no major peaks in the area. About 43 percent of the area has sensitive watershed lands, including five percent with slopes over 70 percent.

The vegetation of the area is representative of the Sierran Forest Province (Bailey Classification M2610), with both mixed conifer and red fir forest types present (Kuchler Vegetation Type 005 and 007.) The area contains 10,674 acres of mixed conifer and 2,445 acres of red fir forest types. The forested land is scattered throughout the entire area. The remaining acres consist of riparian vegetation, hardwoods, brush, barren areas, and other nonforested land. There are 940 acres of wetlands comprising five percent of the area.

A majority of the East Yuba area is characterized by distinctive, highly scenic landscapes; but a significant portion, most in the south, is fairly common in nature. There is 63 percent variety class 'A,' and 37 percent is the less scenic variety class 'B.' Over 98 percent of the area retains a natural, unaltered appearance (EVC class II). Less than 1 percent of the area is in either class III or IV (areas with obvious human-made alterations). The attractiveness of the area is focused on the canyon bottoms such as those immediately adjacent to Laveuola, Spencer, and Smith Creeks, and the high country around Spencer and Hawley Lakes.

The Pacific Crest National Scenic Trail crosses the northern portion of this area. There are numerous routes constructed for mining during the past 100 years. Active prospecting and exploration occurs within the roadless area, such as at the Four Hills Mine located in the northeast portion. The Boy Scouts of America recently acquired an 80-acre campsite on private land on the eastern boundary. To the east of the area is the Lakes Basin - Sierra Buttes area, which receives heavy recreation use.

Recreation use in the East Yuba area totals about 26,900 visitor days. Hunting, fishing, and hiking are the major activities. OHV use occurs in the eastern portion. Differences of opinion exist between the OHV and nonmotorized users relating to OHV use. Many travelways receive heavy OHV use.

Livestock grazing occurs in one allotment during the summer months: no structural improvements exist.

The area has been impacted by human beings over the past 100 years, primarily by the search for valuable minerals. There are many active mining claims and evidence of historic mining (primitive roads, buildings, mineshafts, diggings, and tailings) which exist throughout the area.

Adjacent TNF lands are primarily managed for recreation use with intensive timber management restricted to the northern and eastern regions. The West Yuba RARE II area is located 1 to 2 miles to the west.

MIDDLE YUBA

(RARE I AREA #266) - 7,855 net TNF acres, 13,273 gross acres. See Figure G-4.

In 1971, the first Roadless Area Review and Evaluation (RARE) identified this area as an inventoried roadless area. In 1972, Judge Samuel Conti of the Northern District Court of California ruled in *Sierra Club v. Butz* that further study and an EIS must be prepared prior to the allocation of roadless areas to nonwilderness. The Middle Yuba RARE I area was affected by this decision. This area did not meet RARE II criteria, therefore, it was not analyzed in the RARE II EIS. This area is situated on the Middle Yuba River, primarily on the Downieville and Nevada City Ranger Districts. There is a small portion on the eastern edge in the Sierraville Ranger District.

Elevations range from 3,200 to 6,800 feet. Precipitation ranges from 60 to 75 inches per year; this occurs mostly as rain on the 57 percent of the area below 5,000 feet and primarily as snow above that elevation.

The entire area is an alternate landownership pattern. Over 40 percent is privately owned. Most of the private land would be managed for intensive forest management. The area is also included in cost-share supplements. The river bottom and canyon slopes have been heavily mined, and the entire canyon bottom is encumbered by power withdrawals.

There are some active mining claims in this area. There is abundant evidence of historic mining throughout the area, such as mineshafts, buildings, primitive roads, and tailings. Mining activity continues today, particularly placer mining. Recreation use totals 1000 visitor days, most of which is fishing and river use associated with suction dredging, sluicing, and panning for gold.

This area includes the slopes of the Middle Yuba River canyon, which is typically steep and inaccessible. One section is aptly named 'Gates of the Antipodes.' Seventy-one percent of the unit has slopes over 50 percent, with 17 percent of this being slopes over 70 percent. Thirty percent of the area is within sensitive watershed lands. There are 18 miles of perennial streams. Water quality is very high. A portion of this area was proposed for evaluation as a wild and scenic river by the Department of the Interior's Heritage Conservation and Recreation Service. (Refer to Appendix E, Wild and Scenic River Evaluation.)

The majority of the Middle Yuba area has high scenic quality. Sixty-one percent of the acreage is categorized as variety class "A," signifying distinctive landscape features and a high level of variety. The sizeable acreage that remains is basically common in scenic nature. The remaining is 37 percent variety class "B" (common scenic quality), and two percent variety class "C" (minimal scenic features).

Most of the area retains its natural appearance without noticeable signs of alteration. Seventy-seven percent is in existing visual condition II, which denotes natural appearance: 17 percent appears predominantly natural but has visual alternations (EVC class III); and six percent is dominated by the effects of man (EVC class IV.)

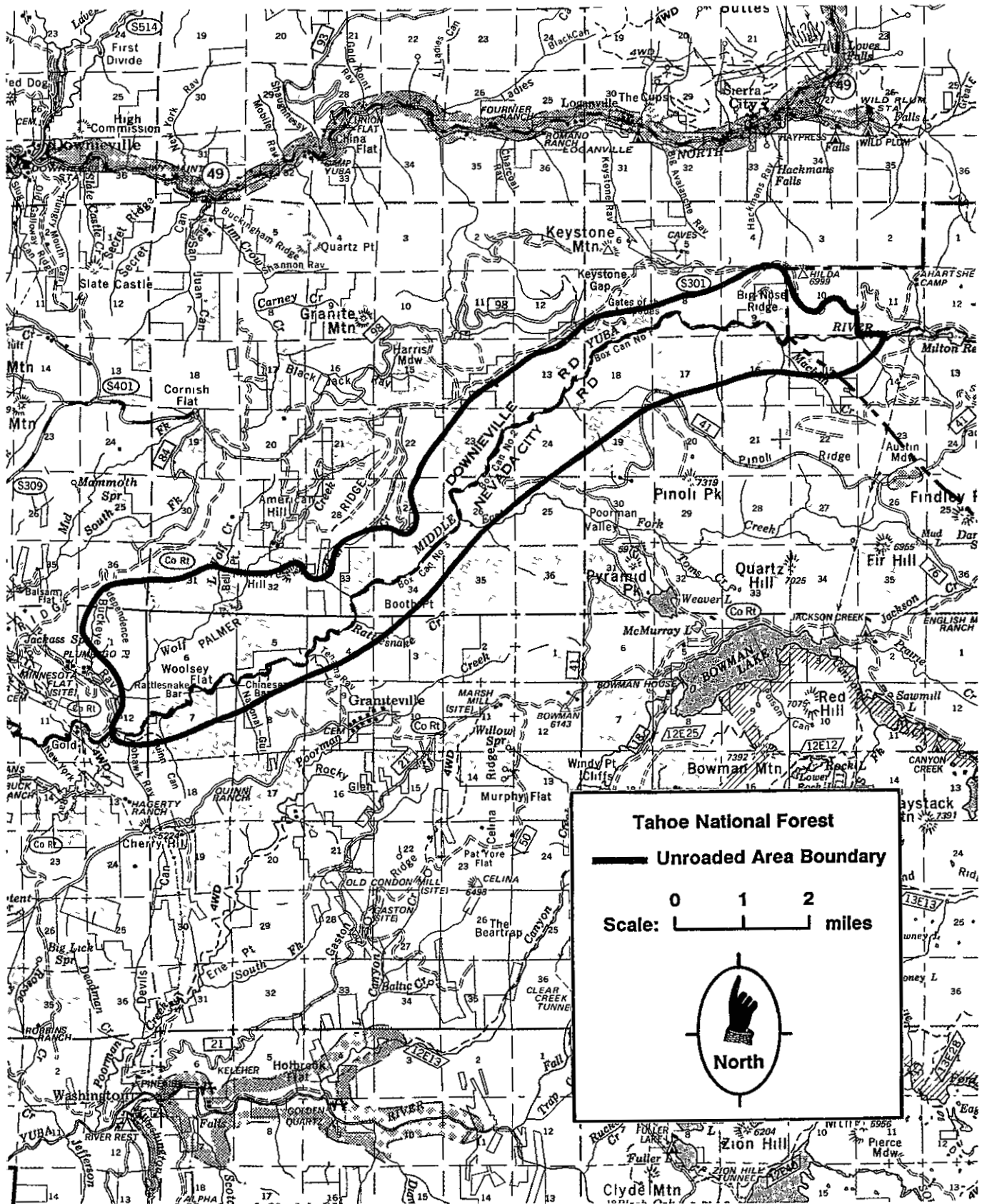
The vegetation is representative of the Sierran Forest Province (Bailey Classification M2610) with primarily a mixed coniferous forest community (Kuchler Vegetation Type 005).

The area contains 5,348 acres of mixed conifer and 94 acres of red fir forest types. The forested land is located on the upper slopes above the Middle Yuba River canyon. A large portion of this area has been logged and roaded. The remaining 2,424 acres consist of hardwoods, brush, barren areas, riparian vegetation, and other nonforested lands, which are located on the steep canyon slopes. This includes about 200 acres of wetlands, comprising less than three percent of this unit. The Gold Creek Fire burned over a large portion of the southeast end of this area. A portion of one cattle allotment is within this area although grazing is limited by the terrain.

The main attractiveness of this area is the Middle Yuba River and canyon walls, which are located in the center of the area. Other scenic attributes are the tributary creeks with their steep drainages and vegetated slopes. The area is popular for fishing.

National Forest System lands surrounding the area are managed primarily for timber production.

Figure G.4: Middle Vuba Roadless Area



GROUSE LAKES

#5260 (RARE II nonwilderness) - 10,096 net TNF acres, 20,996 gross acres See Figure G-5

The Grouse Lakes area is located in western Nevada County on the Nevada *City* Ranger District. The area includes numerous lakes and streams that are the focus of much recreation use. It includes about 17 miles of perennial streams and lakeshore. Water quality is high.

Annual precipitation averages 70 inches, largely falling as snow.

The landscape is broken, with much of the area characterized by glaciated granitic landforms. Elevations in the area range from 5500 feet near Eagle Lakes near the southwestern boundary to over 8000 feet in the Black Buttes region. Signal Peak and Old Man Mountain, near the southeastern boundary, both rise above 7700 feet in elevation. The area was recommended as nonwilderness in the RARE II EIS.

About 21 percent of the area has over 50 percent slopes. Fifty-seven percent of the watershed lands are sensitive.

The vegetation is representative of the Sierran Forest Province (Bailey Classification M2610) with both red fir and mixed conifer forest communities. (Kuchler vegetation type 045 predominates according to the RARE II analysis. This determination is erroneous, however, as red fir (007) and mixed conifer (005) are the correct types for this area.) The remaining acres consist of riparian vegetation, hardwoods, barren ground, brush, and water. There are 550 acres of wetlands, comprising five percent of the area.

The high natural scenic quality of the area is underscored by the fact that 99 percent is variety class "A," highly scenic.

The degree of current man-caused alterations of the natural landscape (existing visual condition) is minimal within the area. Approximately 99 percent of the area shows no evident change to the natural condition (EVC classes I and II).

Over one-half of the Grouse Lakes area is in private ownership. The primary owner is Sierra Pacific Industries. The company manages most of their forested land for timber production. They plan to construct a road into their most productive land through Sections 18 and 19, T. 17N., R. 13E., MDM, under a non-cost share easement. SPI has also expressed an interest in a cooperative agreement with the Forest Service in the same area.

There was a great deal of mining activity in the eastern and southern portions of the area during the late 19th century and early 20th century, but little gold was recovered due to the nature of the ore. The granitic nature of most of the area makes for an overall low mineral potential.

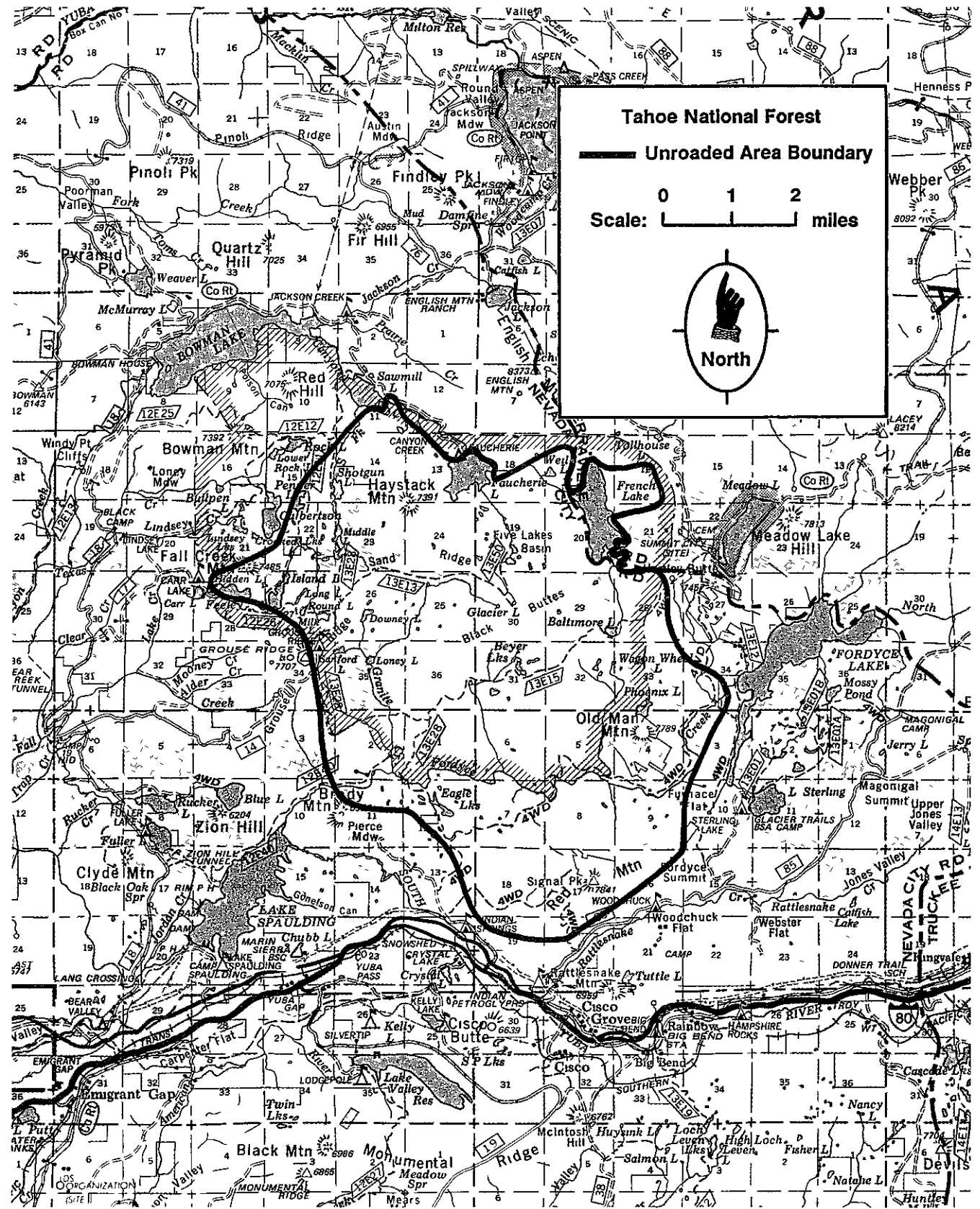
Dispersed recreation (hunting, fishing and hiking) is the primary use of the area. The majority of the area is closed to OHV use, with several exceptions. One is a small segment of the Meadow Lake jeep road which passes through a portion of the motor vehicle closure area. The area south of Fordyce Creek is open to OHV use with moderate to heavy use of Red Mountain and Signal Peak jeep trails.

There are a number of heavily used trails within the area. Many of these allow hiker access to the lakes in the region. Recreation use is concentrated around these lakes and totals 26,100 visitor days.

Grazing use occurs within the area during the summer months. Portions of two allotments are within the Grouse Lakes area. There are no fences or other range structural improvements. The main attractiveness of the area is the many lakes and highly scenic quality of the area.

Interstate 80, which has a heavy volume of traffic and noise, is adjacent to the southern edge of the area. Most of the surrounding area contains heavily used recreation complexes.

Figure G.5: Grouse Lakes Roadless Area



BALD MOUNTAIN

#5981 (RAREII nonwilderness) - 6,253 net TNF acres, 65,453 gross acres: Bald Mountain 4091 (RAREII nonwilderness) - 960 net Toiyabe NF Acres, 960 gross acres. See Figure G-6.

The Bald Mountain area is located east of the Sierra Nevada range on the Sierraville Ranger District. Approximately 960 acres are located within the Toiyabe NF.

The area is characterized by dry, rugged canyons and forested ridges. The landscape is rocky and soils are often poor. Elevations range from 8,760 feet at Babbm Peak on the eastern boundary to 6,300 feet on Rock Creek near the western boundary.

About three percent of the unit has over 50 percent **slopes**. Twenty-three percent of the area is within sensitive watershed lands. There are eight miles of perennial streams. Precipitation averages about 25 inches annually, largely as snow. Water quality is very high.

The vegetation is representative of the Sierra Forest Province (Bailey Classification M2610) with primarily an eastside pine forest type (Kuchler vegetation type 005).

There are 4,866 acres of eastside (primarily Jeffrey) pine, about 350 acres of Washoe pine, juniper, and pinyon pine. The remaining acres are brush, grass, barren areas, or riparian vegetation. There are 300 acres of wetlands, comprising five percent of the area.

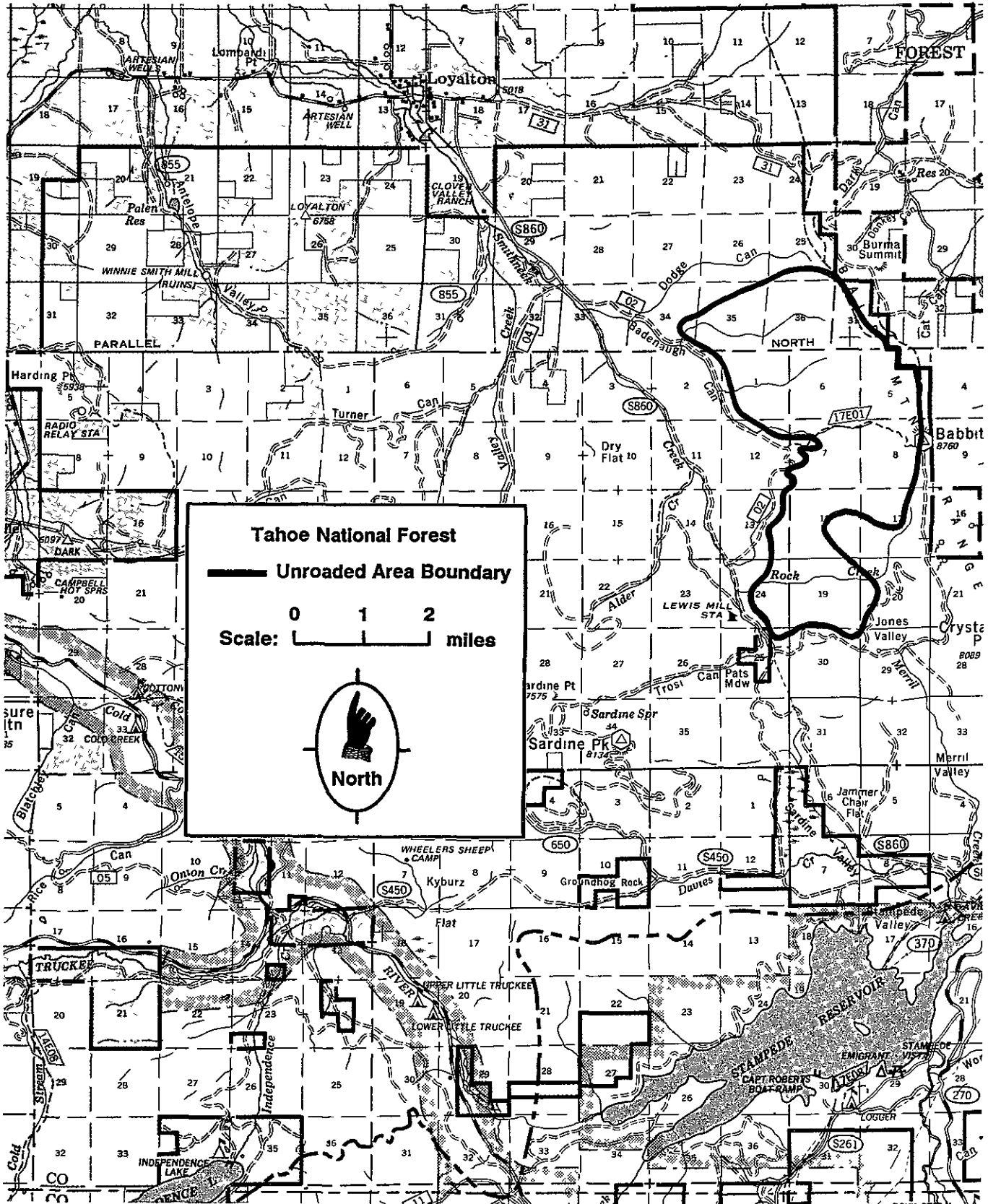
The majority (77 percent) of the area is of average scenic quality (variety class 'B'), with only 22 percent classed as being highly scenic (variety class 'A').

The degree of human-caused alterations of the natural landscape (existing visual condition) ranges from no evident ecological change (EVC II) to moderate change (EVC V). The areas of moderate change are those which have been logged in the past few years. Timber harvesting has occurred in the past and recently (1982) in an area covering approximately 200 acres in the central portion of the area. An additional 480 acres was logged in 1983.

A small portion of the Bald Mountain area is in private ownership. This private land is located near the northern boundary. Recreation use is low, averaging around 6,100 RVDs each year. Most of this is hunting, hiking, and OHV use. There are a number of unimproved roads, trails, and dispersed camping locations within the area. There are some rock exposures and steep terrain which provide some challenge for recreationists. The primary attractiveness of the area is the good hunting which may be found there.

Approximately 1,061 acres have been recommended for establishment as a Research Natural Area (RNA). This acreage has been revised upwards from the 900 acres documented in the working copy of the Environmental Assessment for the Babbm Peak RNA, available at Tahoe National Forest Forest's Supervisor's Office, Nevada City, California, and Toiyabe National Forest Supervisor's Office, Reno, Nevada. A portion of a cattle grazing allotment is also located within the Bald Mountain area. The City of Santa Clara has proposed establishing windmills within and adjacent to the area to generate electricity.

Figure G.6: Bald Mountain Roadless Area



DUNCANCANYON

#5259 (RARE II Nonwilderness); 8703 net TNF acres, 9403 gross acres. See Figure G-3.

This area is situated in eastern Placer County on the Foresthill Ranger District. It includes portions of the State Game Refuge encompassing the French Meadows Reservoir recreation area.

The major feature of the area is the rugged Duncan Canyon. Red Star ridge forms the eastern and southern boundary of the area while Little Bald Mountain and Sunflower Hill mark the western boundary. The northern boundary is the French Meadows - Soda Springs Road.

About seven percent of this unit has over 50 percent slopes. Twenty percent of the area is within sensitive watershed lands. There are about 13 miles of perennial streams. Precipitation averages about 70 inches annually, most of it as snow. Water quality is very high.

This area was recommended as nonwilderness in the RARE II EIS.

The vegetation is representative of the Sierran Forest Province (Bailey Classification M2610) with both red fir and mixed conifer forest communities (Kuchler Vegetation Types 005 and 007). The area contains 3,448 acres of mixed conifer and 4,536 acres of red fir. The remaining acres consist of riparian vegetation, hardwoods, brush, barren areas, and other nonforested land. There are 400 acres of wetlands, comprising five percent of the area.

Elevations within the area range from 5,100 feet along Duncan Creek to 7,182 feet at Little Bald Mountain.

The natural Scenic quality (variety class) of the area is predominantly lands with average scenic potential. As inventoried by the TNF Landscape Architect, the area is 34 percent highly scenic variety class 'A' and 66 percent of the area is variety class 'B', average scenic quality land. The degree of current human-caused alterations of the natural landscape (existing visual condition) within the area is minimal with most of the area appearing natural. Approximately 91 percent of the area has no noticeable alterations (EVC class II), 8 percent is predominantly natural (EVC class III), and one percent is dominated by alterations (EVC class IV).

One section (640 acres) near Sunflower Hill is in private ownership. In 1979, Erickson Lumber Company constructed a road under special-use permit to access their lands. The company plans to manage their land for timber production.

There are several unpatented mining claims within the area. The overall mineral potential is not considered significant.

Portions of two grazing allotments are located within the Duncan Canyon area. There are no range improvements.

Hunting, fishing, hiking, and plant study are the principal recreation uses, totaling 2,300 visitor days annually. The Tevis Cup Loop passes through the area along Red Star Ridge. This trail is used for an annual endurance ride and run.

The main attraction in this area is Little Robinson Valley in the western portion of the area. TNF lands surrounding the roadless area are managed primarily for timber production.

NORTH FORK OF THE MIDDLE FORK OF THE AMERICAN RIVER

#5265 (RARE II nonwilderness) - 10,653 net TNF acres, 11,153 gross acres. See Figure G-7.

This area is located in Placer County on the Foresthill Ranger District between Mosquito Ridge and the Foresthill Divide. The area is characterized by steep and rugged canyons. Ninety-seven percent of the area has over 50 percent slopes. The major attraction is the North Fork of the Middle Fork of the American River. There is a total of about 41 miles of perennial streams. Water quality is very high. Elevations in the area range from around 4800 feet near the eastern boundary to 1600 feet along the river at the western boundary.

The area receives an average of 50 inches of precipitation annually, nearly all of it in the form of rain; snow accumulation is rare.

The scenic quality of the area is characteristic of most of the western Sierra Nevada intermediate elevation areas. Over 50 percent of the area is classed as highly scenic with 44 percent of the area having only average scenic quality. Four percent of the area has low scenic quality.

The degree of human-caused alterations of the natural landscape (existing visual condition) ranges from no apparent ecological change to moderate change to the natural condition. A total of 9,461 acres show no evident change (EVC I), 336 acres show little change (EVC II), 850 acres exhibit noticeable change (EVC III), and six acres show moderate change to the natural condition.

About 57 percent of the area is described as being within sensitive watershed lands, virtually all of this on slopes over 70 percent.

The vegetation of the area is representative of the Sierran Forest Province (Bailey classification M2610) with a mixed conifer forest community (Kuchler Vegetation Type 005). There are 6,374 acres of mixed conifer, 3,723 acres of commercial and noncommercial hardwoods, and most of the remaining acres are either digger pine, brush, or barren. Only about two percent of the area is wetlands.

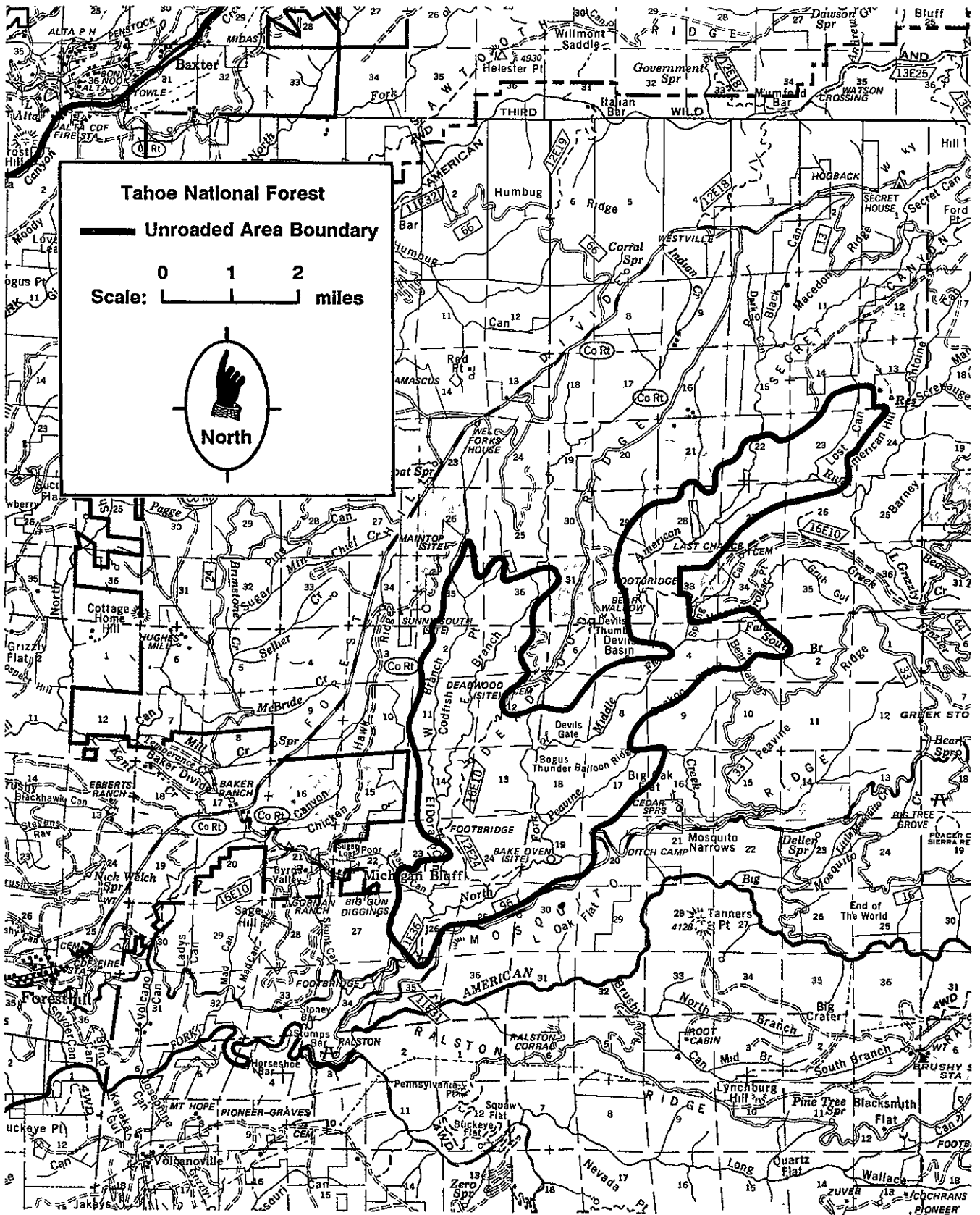
Only 500 acres is in private ownership. Mining has been an important activity in the area since the early days of the Gold Rush. Numerous active mines occur in the area. Recreation use is low (2,700 visitor days) and primarily involves hunting, fishing, and hiking.

The remains of former mine structures and cabins are numerous and there are two standing structures.

Virtually all of the area is open to OHV use but the steep topography and lack of many roads limits use. There are several trails through the area which have a long history of use. Two annual competitive events use the trail system. Portions of three grazing allotments occur in the area. Use in the area by cattle is light due to terrain and lack of forage.

The area was recommended for nonwilderness in the RARE II FEIS.

Figure G.7: North Fork of the Middle Fork American River



CASTLE PEAK

(RARE I)- 9301 net TNF acres, 17251 gross acres See Figure G-8.

This area is located along the crest of the Sierra Nevada between Castle Peak on the south and Mt. Lola on the north. The area is characterized by sparse vegetation, high elevations, steep, rocky terrain, and shallow soils. About 21 percent of the area has over 50 percent slopes. Forty-one percent of the area is within sensitive watershed lands. Mt. Lola and Basin Peak, both over 9,000 feet, are the highest peaks in the area. The lowest point within the area is along Lower Castle Creek near the southwestern boundary where the elevation drops to 6,900 feet. Precipitation averages about 65 inches annually, an estimated 90 percent of it as snow.

This area was inventoried as a roadless area in the RARE I process and it was analyzed for wilderness potential in the Truckee-Little Truckee Rivers Land Use Plan (T-LTRUP) EIS. Management direction in the Plan is to protect soil and water, maintain visual qualities, and manage for dispersed recreation. Because the area was analyzed for wilderness allocation in the T-LTRUP, it was not included in the RARE II inventory.

There are several lakes within the area; White Rock and Warren are the largest. Prosser, White Rock, and Lower Castle Creek are the principal streams. There are over 12 miles of perennial streams and lakeshore in this area. Water quality is high.

Castle Peak and its surroundings are among the most scenic areas on the Tahoe National Forest. This is due to the rugged topography, presence of vistas of lakes, rock outcrops, etc. Nearly the entire area (99 percent) is variety class "A", highly scenic. The degree of human-caused alterations of the natural landscape (existing visual condition) within the area is minimal.

Approximately 97 percent of the area shows no evident change to the natural condition (EVC classes I and II). The remaining 3 percent shows little change to the natural condition.

The vegetation of the area is representative of the Sierran Forest Province (Bailey Classification M2610) with both red fir and mixed conifer forest communities (Kuchler Vegetation Type 007, red fir forest). The area contains 5,206 acres of red fir, 468 acres of mixed conifer, and 469 acres of lodgepole pine. The remaining acres consist of grass, riparian vegetation, brush, or are barren. There are 960 acres of wetlands comprising ten percent of the area.

Nearly one half of the area is in private ownership. The primary landowner manages its land for timber production. Logging has occurred on their land in the White Rock Lake area.

The Castle Peak area has been used primarily for recreation over the last 100 years. No major mining activity has occurred in the area and there is little mineral potential. Several timber sales are planned in the area. The Perazzo Sale (15,6 MMBF) has sold and is partially logged.

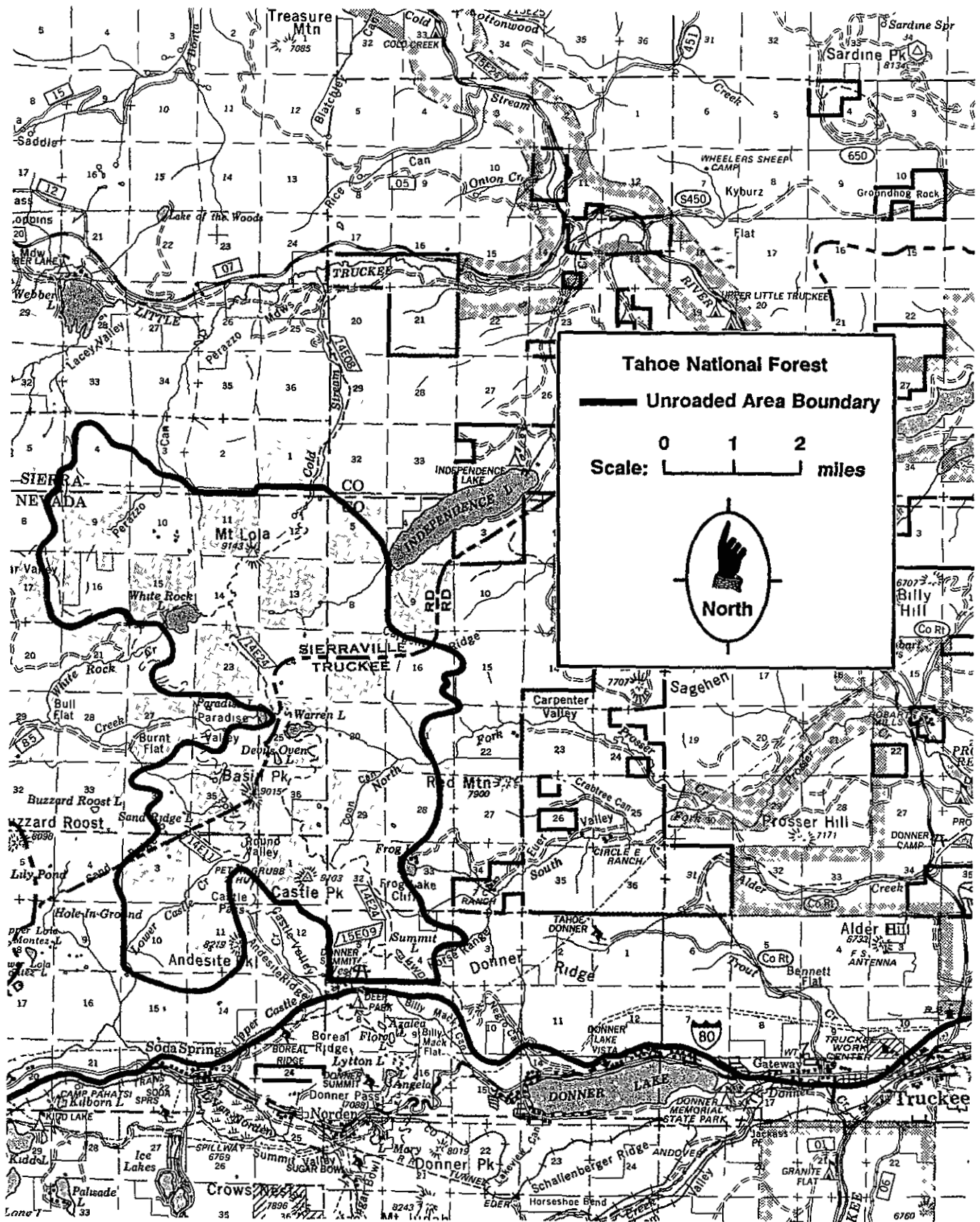
There is no accurate information on the amount of recreation use but the area is popular for hiking in the summer and sees heavy cross-country skiing and snowmobile use in the winter. The Sierra Club maintains a cabin (Peter Grubb hut) for recreation users in the Round Valley area.

Most of the area is open to OHV use on designated routes only. The general lack of OHV routes, however, contributes to low use except for snowmobiling in winter. There are several trails through the area, including a portion of the Pacific Crest Trail, but few roads. Through cooperative agreement a road has been constructed through Sections 3 and 9, T 18N, R. 14E., MDM.

Portions of three grazing allotments are located within the area. Most of the grazing is by sheep. The White Rock allotment is currently closed.

The main attractiveness of the area is its highly scenic character and the lakes and streams.

Figure G.8: Castle Peak Roadless Area



LAKES (BASIN)

(RARE I) - 551 net TNF acres, 551 gross acres* See Figure G-1.

This area is situated on both the Plumas and Tahoe National Forests. It is about seven miles south of Blairsden and Plumas Eureka State Park. Principal access is via the Gold Lake Highway or the State Park. Access from the TNF is via a **jeep** road through Gold Valley. **The** portion of the area on the TNF is very rocky and sparsely vegetated. The southern boundary follows a **jeep** road from the vicinity of Oakland Pond to Snake Lake then extends westerly to the private lands near Hawley Lake. These private lands form the western boundary.

The Tahoe portion ranges in elevation from 66,640 feet to 7,440 feet. About 3 percent of this area has over 50 percent slopes. Twenty-five percent of the watershed lands are sensitive. There are no perennial streams or lakes on the Tahoe portion. Precipitation averages 60 inches annually, nearly all of it as snow. Wetlands are negligible.

The Pacific Crest Trail (PCT) passes through the area near the administrative boundary between the Plumas NF and Tahoe NF. OHV use occurs on several **jeep** roads adjacent to the area, but overall the steep terrain of the TNF portion limits recreation use.

The TNF portion is highly mineralized, and mining has occurred in the vicinity since the 1850's. The Four Hills mine is located just west of the roadless area boundary.

There is a portion of one grazing allotment in the Lakes Basin area.

The Lakes Basin area was not evaluated for wilderness under RARE II. The Plumas NF is coordinating the analysis of the area and a complete discussion of the capability, availability, need, and consequences of wilderness or nonwilderness allocation may be found in the Plumas NF Forest Plan FEIS.

* The entire roadless area contains 7,140 acres (gross and net); the remainder of the acreage (6,939 acres) is on the Plumas NF.

APPENDIX H

SOIL PRODUCTIVITY

This appendix provides background information on how Forestwide **S&G 55, Maintain Soil Productivity**, was developed. It includes the assumptions made, references to the published research these assumptions were based on, and the logic used to develop the **S&G**. This appendix also supplements the analysis of environmental consequences in Chapter 4 by explaining how the implementation of **S&G 55** would mitigate adverse impacts of land management activities on long-term soil productivity.

Maintaining the long-term productivity of forest soils is a complex issue not readily reduced to simple terms. While much is known about the general effects of land management activities on forest soils, much less is known about the effects of specific activities. Therefore, predictions about how local soils will respond to management treatments must be based on application of general principles, and on extrapolation of experience and research from other areas. Soil qualities and characteristics related to soil productivity can provide a conceptual framework for: (1) applying general principles to specific soils, (2) extrapolating experience and research from other areas to local soils, and (3) developing forestwide standards and guidelines for maintaining soil productivity.

SOIL CHARACTERISTICS: INDICATORS OF SOIL PRODUCTIVITY

Soil productivity is the inherent capacity of the soil to support the growth of specified plants, plant communities, or a sequence of plant communities. Soil productivity is based on soil properties (characteristics and qualities) inherent to the soil itself. In contrast, forest productivity is a much broader concept that encompasses silvicultural factors such as stocking level, control of insects and disease, genetic quality of stock, etc. The effect of these silvicultural factors can mask small but significant changes in soil productivity. Also, several years of forest growth are needed before changes in site conditions are reflected in measurable changes in the growth of trees. For these reasons, carefully selected soil properties can be more sensitive indicators of changes in long-term soil productivity than forest growth.

Many soil properties affect soil productivity. To be useful as an indicator of changes in soil productivity a soil property should be: (1) readily changed by management activities; (2) easy to measure or observe (or directly correlated with a property that is); (3) strongly correlated with the growth of forest vegetation; and (4) sensitive to incremental changes that can cumulatively reduce soil productivity. Three soil characteristics that meet these criteria are: (1) soil porosity; (2) soil depth; and (3) soil organic matter. Measurable changes in these three soil characteristics are strongly correlated with changes in long-term productivity.

SOIL PROPERTY STANDARDS AND GUIDELINES

Soil productivity standards and guidelines serve several functions. They define minimum requirements for protecting the soil resource when management prescriptions are developed; they provide a tool for predicting the need for mitigation measures or restoration treatments, and they provide a basis for monitoring management practices to determine whether or not soil productivity is being maintained.

Effective standards and guidelines should be expressed in terms of readily measurable soil characteristics; be supported by research reported in the scientific literature, or based on local experience and observation; and have a reasonable chance for effective implementation. Forestwide **S&G 55, Maintain Soil Productivity**, was developed with these three criteria in mind.

SOIL POROSITY

Over half the volume of a typical forest soil is pore space consisting of large and small pores (macropores and micropores). About half of this pore space consists of micropores, occupied by water when the soil is moist, the other half, the macropores, is occupied by air, and is important in gas exchange and root

respiration. Fine plant roots must expand to new soil volume to obtain nutrients and moisture. Because roots can exert very little axial pressure, they are dependent on macropores for root expansion (Alexander and Poff, **1985**). Reductions in macroporosity are strongly correlated with reductions in plant growth

Porosity is reduced when heavy equipment is operated on the soil when its strength is low (Alexander and Poff, **1985**). When soil is subjected to a load it cannot bear, it compacts until it has enough strength to bear the load. This compaction causes a loss of soil porosity and an increase in density. All management activities that involve ground-based equipment carry a risk of reducing soil porosity. Examples are yarding logs with tractors, rubber-tired skidders, or feller-bunchers, and using tractors to pile logging slash. Porosity can also be reduced by oxidation or consumption of organic matter or by **loss** of soil to erosion or displacement, but these **losses** in porosity are usually smaller than those associated with compaction.

The relationship between loss of soil porosity and reduction in plant growth is almost linear (Froehlich and McNabb, **1984**), and has been demonstrated for forest stands (*wen* and Thomas, **1981**) as well as for individual trees. These reductions can persist for decades (Froehlich and McNabb, **1984**). **Loss** of porosity is primarily a short-term impact, but long-term impacts can occur when a decrease in infiltration causes increased runoff and soil erosion.

Repeated stand entries with ground-based equipment can cause a cumulative loss in soil porosity. The small decreases in porosity caused by each entry, not individually significant, can add up to significant losses in stand growth with repeated entries (Froehlich and Berglund, **1976**).

The standard for soil porosity in S&G **55**, Maintain Soil Productivity, is the same as the Pacific Southwest Region standard contained in FSH **2509.18**, Soil and Water Conservation Handbook (USDA-FS, **1988**). This standard was developed in the winter of **1986** by a task force of experts on soil compaction that included a university professor, a researcher, a field *soil* scientist, an extension soil specialist, a forest supervisor, and Regional specialists in logging systems and watershed management.

Soil porosity and soil density are numerically related; as density increases, porosity decreases, but the relationship is not linear. A reduction in soil porosity, rather than an increase in density, was selected as an indicator of soil productivity because using porosity as the threshold allows a slightly larger increase in density for soils with low densities, but allows a smaller increase for soils with high densities. The logic is that soils with initially high densities are already close to densities that limit plant growth, and therefore cannot tolerate as much of an increase in **density** as can soils with initially low densities.

The threshold of a 10 percent loss in soil porosity was based on the assumption that this change in porosity is required before a significant loss in forest stand growth can be detected. Apparently, forest stands can compensate for smaller losses in **porosity**.

Four broad management strategies can be used to limit the **loss** in soil porosity to less than 10 percent: (1) avoid compacting forces—for example, use aerial logging systems, (2) reduce compactive forces—for example, operate on a cushion of slash or use low-ground pressure equipment, (3) operate when soil strength is high—for example, on frozen ground or when moisture is low, and (4) confine compactive forces—for example, use directional felling, end-lining, and designated skid trails (Alexander and Poff, **1985**).

A loss of soil porosity may be mitigated by tillage (Froehlich, **1984**). Tillage can be effective when compaction has been confined to designated skid trails. Effective restoration of porosity by tillage requires the use of specially designed or modified equipment, and must be conducted under proper moisture conditions (Froehlich, **1984**). The objective is to restore the soil to a friable condition, which is defined as a condition where 50 percent of the volume of the tilled soil will pass through a **2 mm** sieve.

The soil is considered to be in an acceptable condition when the loss of soil porosity does not exceed 10 percent. When at least 85 percent of an activity area on which ground-based equipment has been used is in an acceptable soil condition, adverse effects on long-term soil productivity are considered mitigated. Effective and implementable management strategies are available to meet this standard.

SOIL DEPTH

In xeric moisture regimes, where nearly all precipitation occurs during a rainy winter season, soil productivity is strongly correlated with soil depth. This is largely because plant growth during the dry summer season is dependent on the available water capacity (AWC) of the soil, which is strongly dependent on soil depth.

A loss in soil depth can occur when there is insufficient soil cover to protect the soil from erosion by raindrops and overland flow. All management activities that reduce soil cover can increase erosion and reduce soil depth. Examples include broadcast burning, tractor piling of logging slash, and overgrazing.

Soil erosion and soil formation are both natural processes. Under natural conditions, the balance between these two processes often determines how deep and productive a soils will be. Deep soils usually occur on gentle slopes, where the rate of soil formation exceeds the rate of erosion, whereas shallow soils usually occur on very steep slopes, where the rate of soil formation barely keeps up with the rate of soil erosion. On productive soils, erosion is considered "accelerated" when the erosion rate exceeds the soil formation rate.

Forest Planning Regulations (36 CFR 21.9.27, Part A) state that "management prescriptions shall conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land." Soil provides the basis for land productivity. When the rate of soil erosion exceeds the rate of soil formation, the productivity of the land is being permanently impaired because, if allowed to continue unchecked, the loss of soil depth will irreversibly reduce the capacity of the soil to support plants. Such losses, highly significant in the long-term, may not result in measurable short-term losses in plant growth.

In his review of the scientific literature on rates of soil formation, Alexander (1985) found that rates of soil formation on consolidated bedrock ranged from about 0.25 to 1.0 tons/acre/year. Rates of soil formation are used to develop soil loss tolerance limits, or T factors, for soils. The T factor is the amount of soil that can be lost annually without affecting long-term soil productivity. The logic is that the soil will not be irreversibly damaged if the rate of soil loss does not exceed the rate of soil formation. Specific T factors are not available for Tahoe N.F. soils. A T factor of 0.75 tons/acre/year was selected, based on Alexander's findings (1985, 1986).

Soil loss tolerance limits developed for use in the Universal Soil Loss Equation (USLE) (USDA-SCS, 1976) assume annual losses of soil associated with agricultural cropping systems. However, in forest management soil is exposed to erosion for short periods of time, followed by longer intervals with complete cover. The rate of surface soil erosion in a mature forest is negligible. During the first two years of the harvest period, erosion rates can increase to 10 times the pre-harvest rates (Clayton, 1983). These accelerated rates then diminish rapidly, and gradually return to the very low pre-harvest levels as the forest canopy closes and forest duff and litter accumulate. These irregular periods of erosion create a scheduling problem too complex to deal with at the forest planning level. Working through sample problems revealed that the largest variable in scheduling erosion rates under forest management was rotation length. This problem was therefore dealt with by using rotation length to adjust the calculated Effective Soil Cover (ESC) amounts.

It is difficult to accurately measure soil erosion, especially at the low rates involved. Erosion is also strongly dependent on rainfall, which in the Sierras varies considerably in amount and intensity from year to year. This means measurements must be taken over long periods (perhaps 10 years or more) to develop meaningful averages.

Soil cover is strongly correlated with reduced rates of erosion, of the factors that affect erosion, cover is the only one readily controlled by management. In addition, predictive models--such as USLE--can be used to calculate the cover amounts needed to keep erosion within specified limits. For these reasons, Effective Soil Cover (ESC) was selected as the standard for maintaining soil depth.

Effective Soil Cover (ESC) is defined as including all materials that will dissipate the energy of falling raindrops. ESC includes plant litter and forest duff (which can be intact, displaced, or disturbed), woody material in contact with the soil, living vegetation, and rock fragments with a diameter of 1/2 to 3 inches. Living vegetation qualifies as ESC if it is no more than 60 inches above the soil surface. The intent of ESC is to prevent the detachment and transport of soil particles downslope by raindrop splash and overland

flow ESC is not intended to trap sediment already mobilized, as is the purpose of Effective Ground Cover (EGC) defined for Streamside Management Zones in Forest Plan Appendix F.

The minimum values for ESC listed in S&G 55, Maintain Soil Productivity, were developed using the following process. A T factor of 0.75 tons/acre/year was selected for the reasons given above. The USLE was then used to compute cover values that would keep erosion rates at or below this T factor. The factors used for cover coefficients were those for 'no appreciable canopy' and for 'cover type G' (duff and litter at least 2 inches thick), given in Table IV 4, page IV 25 of EPA Publication 600/8-80-012 (EPA, 1980). Coefficients for the other USLE factors were developed following Forest Service Pacific Southwest Region instructions (USDA-FS, 1977). These instructions recommend the use of USLE when quantifying erosion and provide USLE factors based on the Pacific Southwest Region's Erosion Hazard Rating System (EHR). The R values (climatic factor) in these instructions are comparable to R values in other published sources, including the EPA document cited above. A 2-year, 6 hour precipitation event was the basis for the calculations.

ESC values were developed for a range of slopes using EHR values of 2 for slope uniformity and water concentration potential. The K factors (soil erodibility factor) published by the SCS and included in the Tahoe National Forest Soil Resource Inventory (Hanes, 1986) were not used. Local experience, and data collected during special studies on the Tahoe NF (Glines, 1987), suggest these values are not applicable to local conditions. The K factors used were from locally developed EHR forms.

ESC requirements were calculated for each soil type on the forest over a range of slope gradients. The problem of a periodic vs. annual soil loss was dealt with by using rotation length to adjust ESC as discussed above. A rotation length was assigned to each soil type based on productivity (the rotation lengths in FORPLAN were used), with shorter rotation lengths assigned to the more productive soils. This gave the more productive soils higher ESC values than comparably erodible soils with longer rotation lengths. The logic is that the shorter the rotation length, the greater the proportion of the rotation in a disturbed soil condition.

The calculated ESC values for each soil type were then listed for 30 and 60 percent slopes and, using a pseudo-ordination procedure, soils were grouped by ESC values, which resulted in four soil groups. Minimum ESC values for three slope ranges were displayed in a table for each soil group, and these values averaged and rounded off.

Maintaining ESC is the primary method for controlling erosion and limiting the loss of soil depth. The two management operations with the greatest potential to reduce ESC are broadcast burning and tractor piling of logging slash. Grubbing to remove competing vegetation in plantations, and biomass harvest as an alternative site preparation treatment, also have the potential to reduce ESC.

ESC standards are not in conflict with the need to reduce fuels to acceptable levels. The materials most effective as soil cover are generally smaller-sized and in contact with the soil, not the larger-sized heavy fuels which create the greatest fire hazard.

Where duff is more than 1/2 inch thick, ESC levels can be maintained under broadcast burning if the burning is done when the moisture content of the lower half of the duff is not too low (Shearer, 1981). Where tractor piling, or other mechanical means of treating slash are used, ESC levels can be maintained with good contract specifications and contract administration.

The loss of soil by erosion is irreversible. Soil cover, however, which reduces the risk of erosion, can be replaced. Chipped woody material, slash, straw, or even seeding with grasses are all effective replacements for lost soil cover, and can effectively reduce the risk of soil erosion and loss of soil depth. A loss of soil defined as significant in the long-term may not cause measurable short-term reductions in plant growth, therefore, maintaining soil depth by controlling erosion is considered mitigation of a long-term cumulative effect on soil productivity.

SOIL ORGANIC MATTER

Organic matter is of primary importance in maintaining the long-term productivity of forest soils. The availability of several key nutrients—most notably nitrogen, phosphorus, and sulfur—is dependent on the

organic fraction of the soil (Prichett, 1979). The organic surface layers of forest soils modulate temperature and moisture fluctuations at the **soil-litter** interface which is the habitat for a myriad of micro-organisms, insects, and small animals important in nutrient cycling (Maser and Trappe, 1984). Large woody material on the forest floor retains moisture during the dry summer months, providing critical survival habitat for non-symbiotic **nitrogen-fixing** bacteria (Harvey, et al., 1978; 1980). The biological activity associated with the gradual decay of large woody material accumulates nutrients that might otherwise be lost from the forest ecosystem (Maser and Trappe, 1984).

The importance of surface litter and soil organic matter to forest soil productivity is not new. Studies on yield reductions associated with litter gathering were reported for European forests in the **1800s** (Powers, 1988). More recently, research in Australia has documented a strong correlation between declining yields and the **loss** of organic matter (Squire, et al., 1985).

Large woody material and soil organic matter provide essential habitat for invertebrates, insects, reptiles, and small animals and mammals (Maser and Trappe, 1984), the life cycles of which are interdependent with the growth of higher plants. For example, large woody material provides habitat for the California red-backed vole, which feeds on the fruiting bodies of mycorrhizae, spreading them throughout the forest (Maser and Trappe, 1984). Mycorrhizal associations are essential for the growth of many plants and allow more effective extraction of nutrients from the soil.

Management activities that remove or consume forest duff, litter, and large woody material, or that displace the surface soil, all have the potential to reduce long-term soil productivity. An example of a short-term effect is the **loss** of surface duff and litter, which can alter the habitat of micro-organisms important in nutrient cycling. A long-term effect can result from the loss of large woody material, because this material accumulates nutrients that otherwise would be lost from the **site**. A loss of large woody material could also have a cumulative effect on long-term soil productivity because the accumulated nutrients are held in reserve to be released hundreds of years in the future (Maser and Trappe, 1984). It could take decades, or possibly centuries, to replace the lost soil organic matter, and centuries to replace large woody material (Harvey, et al., 1981). However, these losses are not irreversible if the soil retains **its** ability to produce vegetation.

The specific amounts of soil organic matter, forest duff and litter, and large woody material needed to maintain long-term soil productivity on specific soils and under specific plant communities are not known. The published research, however, provides very strong circumstantial that organic matter is important in maintaining long-term soil productivity (Harvey, et al., 1978, 1980, 1981, 1987, Maser and Trappe, 1984, Powers, 1988, Squire, et al., 1985).

The organic matter requirements in Fowstwide **S&G 55**, Maintain Soil Productivity, are based on the application of general principles, and are considered prudent minimum levels that will serve as a starting point until more information is available. The guidelines for large woody material were adapted from a **position** statement for the Siskiyou N.F. (1987), and are considered a practical level to implement at this time. Decomposition classes for large woody material are defined in Agriculture Handbook 553 (Thomas, 1979). A range is given for large woody material to allow flexibility in applying the standard. Maintaining large woody material is believed to be most critical on the harsher, dryer sites with **less** productive soils (Harvey, et al., 1987). The requirement that at least two logs per acre be in decomposition classes 1 or 2 was included to provide wildlife habitat as recommended in Agriculture Handbook 553 (Thomas, 1979).

There is a concern that it may not be possible to maintain forest duff under plantations. Maintaining forest duff appears dependent on an annual replenishment of needlecast and small woody material and, once the forest canopy has been removed, may not persist until the new plantation is mature enough to provide needlecast. For these reasons it was felt unreasonable to establish higher standards for forest duff at the present time.

The strategies for maintaining soil organic matter, duff, litter, and large woody material are very similar to those for maintaining ESC. Activities with the greatest potential for impacts are broadcast burning, tractor piling and burning logging slash, and biomass harvest. The minimum amounts of organic matter in the standard do not conflict with other resource objectives such as preparing sites for planting and removing high hazard fuels. Large woody material could potentially be a fuel hazard, but the number of pieces

called for, and the fact that more than half are in decomposition classes that are not high hazard fuels, minimizes the conflict. Also, the requirements for large woody material are waived in areas designated as fuel breaks. This is a prudent trade-off, since fuel breaks maintained along ridge tops may allow more woody material to be left elsewhere, further downslope, for instance.

In the case of large woody material, resource objectives for wildlife management and soil productivity are complimentary. The snags left to provide habitat for cavity nesters and other wildlife—and the green trees left for snag recruitment—will eventually fall and, as they pass through the various stages of decay, meet the needs of both soils and wildlife.

The loss of soil organic matter, duff, litter, and large woody material is not readily mitigated because these materials cannot be replaced in the short run. This makes it imperative to maintain reserves of large woody material until more is known about the amounts needed on specific sites.

INTERRELATIONSHIPS AMONG THE INDICATOR SOIL CHARACTERISTICS

The three soil characteristics selected as indicators of long-term soil productivity are highly interdependent. This helps make them good indicators of long-term soil productivity. For example, a loss of soil porosity decreases infiltration; this causes increased runoff and erosion, reducing soil depth. Another example is that an increase in organic matter reduces the risk of a loss in porosity by increasing resistance to compaction and by cushioning the impacts of ground-based equipment. The important point is that the measures taken to maintain any one of these soil characteristics also maintain one or both of the others, and, an adverse impact on one soil characteristic is likely to impact one or both of the others.

APPLICATION AND MONITORING

The relative risk of a significant reduction in long-term soil productivity is considered to be acceptably low when the requirements for maintaining the soil characteristic's porosity, depth, and organic matter have been met on at least 85 percent of an activity area (95 percent where ground-based equipment is not used). An activity area is the area on which a potentially soil-impacting treatment is planned for or has occurred: it includes temporary roads, landings, skid roads and trails, but not system roads. Normally, system roads make up less than 3 or 4 percent of an area, and are considered a dedicated use necessary for the management of the forest. Temporary roads, landings, and skid trails, however, need not remain dedicated. The intent of the standard is to minimize this kind of disturbance where ground-based equipment is used, and to restore impacted areas as soon as it is practical. When less than 85 percent of an activity area meets the standard, rehabilitation measures must be taken. The 15 percent threshold is derived from the Pacific Southwest Region standard for soil compaction (USDA-FS, 1988), which was based on the amount of change in a soil quality needed to produce a measurable change in forest stand growth.

A provision for developing site-specific ESC requirements was included as an alternative to using values in the ESC table. This alternative method also provides flexibility in developing site-specific management prescriptions.

SUMMARY

The application of S&G 55, Maintain Soil Productivity, will reduce the risk of causing a significant reduction in long-term soil productivity while conducting land management activities, especially those associated with timber management. It accomplishes this by setting thresholds for the amount of change allowed in soil porosity, soil depth, and soil organic matter, three soil characteristics basic to long-term soil productivity. Where these threshold values are exceeded, restoration treatments are prescribed.

The soil characteristics selected, and the threshold values selected for each of them, reflect the state-of-the-art in forest soil management on the Tahoe N F , and will change as research findings become available and as information and experiences on other forests is shared. The most valuable feedback, however, will be provided by observing and monitoring the effects of specific treatments on soils that occur on the Tahoe N F . Guidance and direction for monitoring is given in Chapter 2 of FSH 2509.18 (USDA-FS, 1987) Table 6.1 and Forest Plan Appendix K, Soil Monitoring, also provide information on this on-going monitoring effort.

LITERATURE CITED

- Alexander, E.B. 1985. Rates of soil formation from bedrock and consolidated sediments *Phys Geog* 6:25-42
- Alexander, E.B. and R.J. Poff. 1985. Soil disturbance and compaction in wildland management. *Earth Resources Monograph* 8. USDA Forest Service, Pacific Southwest Region.
- Alexander, E.B. 1986. Strategies for soil loss tolerance. In press. (Unpublished manuscript on file, USDA Forest Service, Pacific Southwest Region, San Francisco).
- Clayton, J.L. 1983. Soil disturbance caused by clearcutting and helicopter yarding in the Idaho Batholith. USDA Forest Service Research Note INT-305
- Environmental Protection Agency. 1980. An approach to water resources evaluation of non-point silvicultural sources--a procedural handbook. EPA Publ. 600/8-80-012
- Froehlich, H.A. and E.R. Berglund. 1976. The effect of soil compaction during thinning on the growth of residual trees. Oregon State Univ. For. Eng. Dept. (unpublished manuscript) 17 p
- Froehlich, H.A. 1984. Mechanical amelioration of adverse physical soil conditions in forestry. *Int. Union Forestry Res. Organizations, Proc.* 1:507-521.
- Froehlich, H.A. and D.H. McNabb. 1984. Minimizing soil compaction in Pacific Northwest forests. p. 159-192. In *Forest soils and treatment impacts*, E.L. Stone (ed) Dept. For. Wildlife Fisheries, Univ. Tenn., Knoxville 454 p.
- Glines, N. 1987. Soil cover, erosion, sedimentation and stream protection on clearcut blocks whose fuel treatment was broadcast burning on the Tahoe National Forest, Calif. (unpublished report on file at Nevada City, Calif.) 19 p.
- Hanes, R.O. 1986. Soil Survey of Tahoe National Forest Area, California. Interim Report. Tahoe National Forest, Nevada City, Calif.
- Harvey, A.E., M.F. Jurgensen, and M.J. Larsen. 1978. Seasonal distribution of ectomycorrhizae in a mature Douglas-fir/Larch forest soil in western Montana. *Forest Sci.* 24:203-208
- Harvey, A.E., M.F. Jurgensen, and M.J. Larsen. 1980. Biological implications of increasing harvest intensity on the maintenance and productivity of forest soils. In: *Environmental consequences of timber harvesting in Rocky Mountain coniferous forests*. USDA Forest Service Gen. Tech. Report INT-90, p. 211-220
- Harvey, A.E., M.J. Larsen, and M.F. Jurgensen. 1981. Rate of woody residue incorporation into northern Rocky Mountain forest soils. USDA Forest Service Research Paper INT-282.
- Harvey, A.E., M.F. Jurgensen, M.J. Larsen, and R.T. Graham. 1987. Decaying organic materials and soil quality in the Inland Northwest: a management opportunity. USDA Forest Service Gen. Tech. Report INT-225.
- Maser, C. and J.M. Trappe (ed) 1984. The seen and unseen world of the fallen tree. USDA Forest Service Gen. Tech. Report PNW-164
- Prichett, W.L. 1979. *Properties and Management of Forest Soils*. New York, Wiley and Sons. 500 p.
- Shearer, R.C. 1981. In DeByle, N. Clearcutting and fire in the Larch/Douglas fir forests of western Montana. USDA Forest Service Gen. Tech. Report INT-99.
- Siskiyou National Forest. 1987. Forest position statement. Forest management team notes of May 27, 1987. (unpublished report on file at Grants Pass, Oregon)

Squire, R., P.W. Farrell, D.W. Flinn, and B.C. Acberli. 1985. Productivity of first and second rotation stands of radiata pine on sandy soils. II. Height and volume growth at five years. *Australian Forestry* 48: 127-137.

Thomas, J.W. 1979. Wildlife habitats in managed forests: the Blue Mountains of Oregon and Washington. *Agriculture Handbook No. 553*. USDA Forest Service, September 1979.

USDA-SCS. 1976. Predicting rainfall erosion losses--a guide to conservation planning. U.S. Department of Agriculture. *Agriculture Handbook 282*. 58 p.

Wert, S. and B.R. Thomas. 1981. Effects of skid roads on diameter, height, and volume growth in Douglas fir. *Soil Sci. Soc. Am. J.* 45: 629-632.

APPENDIX I

BUDGETS AND THEIR RELATIONSHIP TO THE FOREST PLAN

Purpose

The purpose of this appendix is to explain Tahoe National Forest (TNF) funding and what effect different funding levels will have on implementation of the land and resource management plan (LMP). The appendix explains 1) the Federal budget process, 2) alternate sources of funding, 3) the TNF management priorities, and 4) monitoring for Plan compliance.

The Budget Process

The Federal budget process is lengthy and complex. The Forest's budget becomes part of the Region's budget, which becomes part of the Forest Service's budget, which becomes part of the Department of Agriculture's budget, before it enters pertinent Congressional subcommittees. Needless to say, the budget gets negotiated every step of the way. Figure 1.1 highlights the chain of events a Forest budget undergoes on its way to and from Congress.

The factors influencing the Forest's final budget are many and relatively uncontrollable from the Forest's perspective. The role of the Plan in this process is to identify for the Secretary of Agriculture, Congress, and the public what appears to the Forest Service to be the programs and funding level for the TNF that would maximize net public benefits. It is anticipated that the parties involved in the budget process will use the Forest's LMP for guidance and long range direction in deciding budget priorities. However, Congress retains the ultimate decision making power over the total Forest Service budget, and the individual budget items such as timber sales, recreation, development, and wildlife habitat enhancement on a Nationwide basis. Therefore, it is probable that the actual TNF budgets will never exactly match the budget's shown in the Plan.

In order to compare the budget and the Plan's Preferred Alternative, we have converted recent budgets and the costs for the LMP Preferred Alternative into pie charts for broad resource categories. Figure 1.2 shows the TNF's budget trends and priorities by resource (function) averaged for fiscal years 1986, 1987, and 1988 and for the Preferred Alternative. The pie on the left shows budget dollars, the pie on the right shows LMP Preferred Alternative dollars.

While not identical, the two pie charts show a similar distribution of funds to major resource areas. The LMP Preferred Alternative pie shows a lowering in road building dollars, and an increase in recreation dollars. The comparison of recent budgets with the LMP Preferred Alternative shows that almost all budget category expenditures would have to increase to achieve full implementation of the Plan. Should Congress continue to fund individual resource programs or provide inadequate overall funding, adjustments would be required in planned output levels and the rate at which some provisions of the Plan would be implemented. For example, should allocated funds to the TNF for recreation construction projects stay at the current level, most of the planned campground and trail construction projects will not be completed in the coming decade. However, if individual resource program funding were not prescribed and overall funding was less than the planned budget, then all Forest activities and outputs would need to be reduced in approximately equal proportion, tempered by minimum needs for resource protection.

Figure 1.1: BUDGET PROCESS FLOW CHART

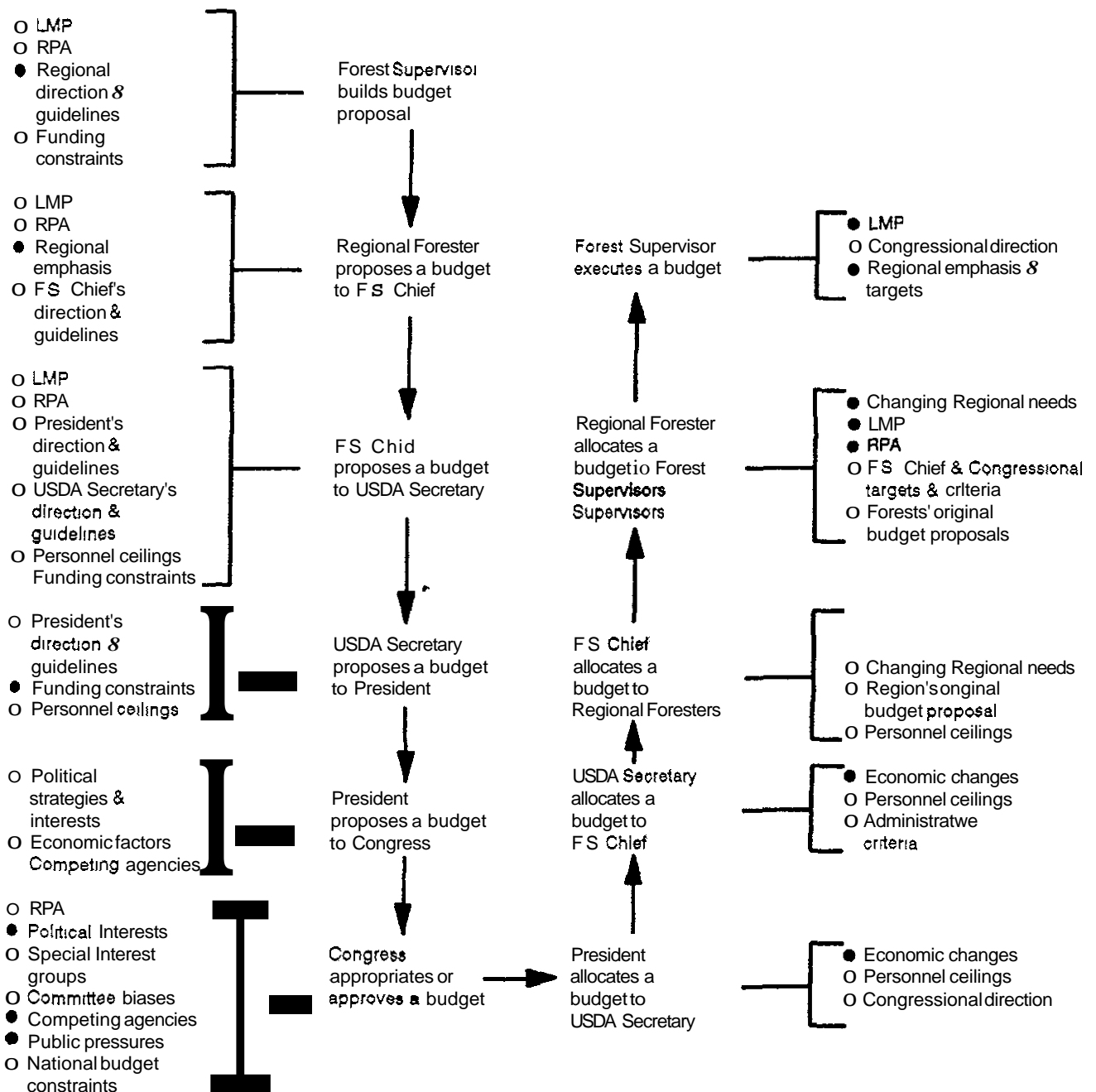
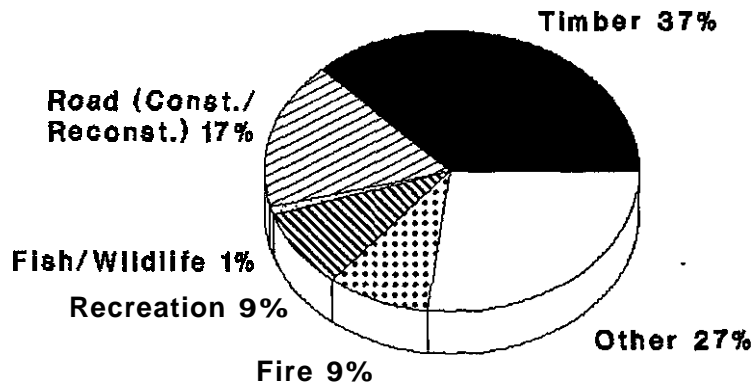


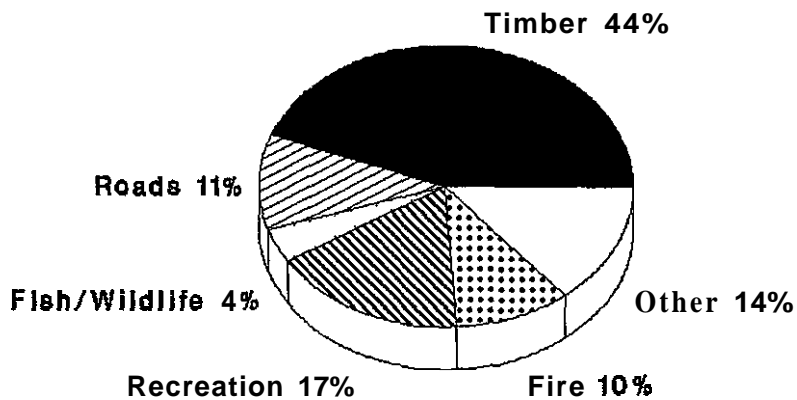
Figure 12: Historical and Planned Budgets Percent of Total

1986 - 1987 Average Annual Budget



Total Budget \$17,000,000

Forest Plan First Decade Average



Total Budget \$21,200,000

• Amounts in 1982 Dollars.

Other Financing

The budget given to the Forest Service by Congress authorizes it to spend both appropriated and trust funds. However, while the budget is paramount in a National Forest's ability to carry out activities, it is not the only factor that allows a Forest to get work done. Forests also receive money and services from many other sources. These other sources are becoming increasingly important.

From FY 1982 through FY 1989 it is estimated that the State of California Green Sticker grant will provide funding of \$2,600,000 for the purpose of operation, maintenance, designing Forest corridors, purchase of land, and construction projects in support of off-highway vehicle activities.

In FY 1988 an estimated total of \$661,000 will be provided by cooperators for the following.

Cooperator	Purpose	Amount
CA Dept. of Fish & Game	Fish & wildlife habitat improvement	\$163,000
Wildlife Conservation Board	Construction of launching facility	61,600
CA Dept. of Boating & Waterways	Erosion control	30,000
State of CA - CDF	Construction of dispatch facility	120,000
Various timber cooperators	Re-marking of timber sales	12,300
Various cooperators	Hydroelectric EA's	6,200
	Recreation maintenance of campgrounds	18,500
	Avalanche control, etc	
	Road maintenance	149,400
Total		\$661,000

In addition, the Forest is continually investigating ways to improve efficiency and productivity. By operating more efficiently, more can be accomplished with available resources.

Forest Priorities Under the Plan

While output levels listed in the Plan are tied to budget levels, they are not the sole or even the primary product of the Plan. The Land Management Plan establishes management direction for the Forest. This includes the minimum management requirements (MMR's), minimum implementation requirements (MIR's) and standard and guidelines discussed in Chapter 2 of the FEIS and Chapter 5 of the Forest Plan. The Plan also establishes those activities appropriate for each section of the Forest (see management prescriptions and management area direction in the Plan). For example, areas managed as semi-primitive nonmotorized will be managed primarily for dispersed recreation with no road building or timber harvesting. Other areas are managed for range or timber production as their primary function. The Forest goals and policies and land allocations are budget-independent. They will be adhered to no matter what budget level is appropriated in the yearly funding process.

Some of the Plan's management direction is budget-dependent. The Preferred Alternative shows the maximum potential the Forest can achieve (the amount of timber which can be sold, the number of cattle grazed, etc) within the bounds of the management direction the Forest has set for itself. The amount of output actually produced and number of activities and projects actually implemented depends on available funding.

Should Congress not provide the budget levels required for plan implementation, management intensity and production levels will be lower. In no case would management standards and guidelines be violated in order to meet production goals. For example, the Plan requires that in riparian areas the emphasis is to protect riparian-dependent resources. This standard can not be relaxed to increase timber harvesting or grazing.

Generally speaking, standards and guidelines fall into two categories 1) those associated with project mitigation, and 2) those which will maintain or possibly enhance the Forest environment.

Standards and guidelines established by the Plan to regulate implementation of projects will not be relaxed simply to meet production levels. Under NEPA, an environmental analysis is prepared for every project that affects other resources. If the environmental analysis shows that the project cannot be accomplished without violating the Forest's standards and guidelines, then the project will be modified or revised to ensure it meets the established standards and guidelines. Other standards and guidelines address maintenance and/or enhancement of the environment but are not tied to specific projects. Lower budget levels will alter their rate of accomplishment.

Monitoring

Each Forest Plan includes a monitoring plan that lets the Forest know how it is doing in meeting the goals it has set for itself. This monitoring plan is given in Chapter VI of the Forest Plan. If the Forest strays too far from accomplishing the objectives set in the Plan, a plan amendment or revision is required. However, because Plan objectives are expressed in average annual terms for a ten-year period, accomplishment levels at less than the annual average will not automatically trigger a plan amendment. The allowed variability for each monitoring item is shown in the monitoring plan. If Forest activities fall outside of the allowed variability, a plan amendment or revision could be triggered.

APPENDIX J

NATIONAL TRAIL EVALUATION

A INTRODUCTION

Congress passed the 'National Trails System Act' on October 2, 1968 which provided for the designation of a system of trails throughout the Nation intended to promote the preservation of, provide public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Nation. The Act provided for the establishment of trails primarily near urban areas of the Nation, and secondarily within scenic areas and along historic travel routes of the Nation

The Act provided for a system of trails composed of the following:

(1) National Recreation Trails are established to provide for a variety of outdoor recreation uses in or reasonably accessible to urban areas. Recreation trails are established by either the Secretary's of Agriculture or Interior, as appropriate

(2) National Scenic Trails are extended trails (usually 100 miles in length or longer) so located to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the Nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass. National scenic trails may pass through deserts, marsh, grasslands, mountains, canyons, rivers, forests and other areas, as well as landforms which exhibit significant characteristics of the physiographic regions of the Nation. Examples of Scenic trails include the Pacific Crest National Scenic Trail, the Appalachian National Scenic Trail, and the Continental Divide National Scenic Trail. Scenic trails are established by Congress.

(3) National Historic Trails are extended trails that follow as closely as possible and practicable the original trails or routes of travel of National historic significance. National historic trails shall have as their purpose the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment. Examples of historic trails include the Oregon Trail and the Mormon Trail. Historic trails are established by Congress.

Publics responding to the Draft Forest Plan have identified the Western States and the Tevis Cup Trails as possible additions to the National Trail System. Interest in designation has gone as far as having a Bill, H.R. 2988, introduced in the House of Representatives on July 22, 1987 for National designation. In response to this bill, the Associate Chief of the Forest Service asked the Regional Forester, who in turn asked the Forest Supervisor, to proceed with determination of eligibility for nomination as National Scenic, National Historic, or National Recreation Trails. Both trails have been used for organized events, including a horse race, a 100-mile endurance run, and other similar races or events that occur over the trail each summer. Both of these trails provide access across private and National Forest System lands between Squaw Valley and Auburn. In addition, the Western States Trail at the western boundary of the Forest connects with the existing National Recreation Trail that comes from Sacramento, and finally ties in with the Pacific Crest National Scenic Trail near Squaw Valley.

Within the Forest, the Western States Trail is approximately 55 miles long and the Tevis Cup Trail is 21 miles long. The total mileage of the portion proposed for designation in this Plan, together with the already designated portion west to Beal's Point, exceeds 125 miles in length.

The Western States and the Tevis Cup Trails are shown on the Transportation Map provided with the Plan.

The State of California, Placer County, and private organizations and individuals have been actively working toward designation of a trail route, with National status, to connect Carson City and Sacramento, the State Capitols of Nevada and California. The California Department of Parks and Recreation was the lead agency in the earlier designation of the Western States Trail located west of the Forest boundary. The Placer County Board of Supervisors has, by resolution, endorsed Federal designation, as has the California Recreational Trails Committee. The Nevada State Parks Department has expressed interest in obtaining designation for that portion through Nevada.

The Tahoe National Forest decided to nominate the Western State Trail as a National Recreation Trail and completed an Environmental Assessment and decision notice on January 17, 1979. The decision notice stated that the nomination process would be initiated once rights-of-way across private lands have been obtained. The process of securing rights-of-way is on-going. This decision is still valid.

The purpose of the following analysis is to evaluate eligibility and/or suitability of the Western States and Tevis Cup Trails for designation as either: (1) recreation trail, (2) scenic trail, or as a (3) historic trail.

B. DETERMINATION OF ELIGIBILITY

The National Trails System Act establishes specific criteria that must be met to qualify for each class of trail.

National Recreation Trail

- 1) trails represent the more outstanding trail opportunities within the Forest.
- 2) provide a day-use or extended trail experience for a variety of outdoor recreation opportunities reasonably accessible to a population center.
- 3) provides for an interconnecting network of National trails.

National Scenic Trail

- 1) extended trail systems (usually 100 miles or more).
- 2) access Nationally significant scenic, historic, natural, or cultural sites.
- 3) represent significant characteristics of the physiographic region of the Nation.

National Historic Trail

- 1) route established by historic use must be historically significant as a result of that use.
- 2) be of National significance with respect to any of several broad facets of American history, such as trade and commerce, explorations, migration and settlement, or military campaigns.
- 3) significant potential for public recreational use or historical interest based on historic interpretation and appreciation.
- 4) must meet all three criteria to qualify.

C. ELIGIBILITY EVALUATION FOR NATIONAL HISTORICAL TRAIL CLASSIFICATION

The Western States and Tevis Cup Trails were reviewed in July, 1988 and evaluated in light of the criteria established for a National Historical Trail. Although the Western States and the Tevis Cup Trails contain historic and scenic values, the Forest Service determined the trails are not of National significance with respect to broad facets of American history. Based on the historical evidence, the Western States and Tevis Cup Trails, in part a successor to the Placer County Emigrant Road, was of local importance and perhaps of Regional or State importance. A seven-mile section of the Trail does qualify for listing in the National Register of Historic Places. However, overall the trail was not an important link to the overland wagon roads of the 1840's and 1850's used during the height of the Gold Rush. In addition, only superficial evidence supports the assumption that the trail was first crossed by the Murphy-Stevens-Townsend Party.

Each of the existing National historical trails had a dramatic effect upon American culture and development of the American frontier, e.g., Santa Fe, Oregon, and California trails. The Western States and Tevis Cup Trails did not have this same level of effect on California or the Nation. The historical evaluation was done by a Forest Service historian in consultation with the California State Historic Preservation Officer.

The Forest Service recognizes that other groups have reached a different conclusion relating to the historic significance of the Trails. This Plan is not intended to preclude such designation, if deemed appropriate by the Congress.

D. ELIGIBILITY EVALUATION FOR NATIONAL SCENIC TRAIL CLASSIFICATION

The criteria used to determine eligibility for scenic classification indicate that a trail should have National or Regional significance in accessing a variety of Nationally significant scenic, historic, natural, or cultural qualities of the areas of which the trail passes through. A National Scenic Trail is intended to be the 'focal point' which serves as a link through a whole range of environmental conditions, from deserts to glaciated peaks, and generally is very long, usually over 200 miles in length. The Pacific Crest Trail, which runs the length of the Cascades and Sierra Nevada from Canada to Mexico, is one example of the quality and significance that a National Scenic Trail should exhibit. The Western States and Tevis Cup Trails contain outstanding scenery and recreational opportunities, but in the Forest Service view do not provide the same variety of recreational experiences and challenges, nor are they Nationally significant from a scenic viewpoint.

As with the Historic Trail evaluation, there are groups that have reached a different conclusion relating to the scenic values of the Trails. This Plan is not intended to preclude such designation, if deemed appropriate by the Congress.

E. ELIGIBILITY EVALUATION FOR NATIONAL RECREATION TRAIL CLASSIFICATION

As stated above, the Western States Trail was evaluated as a possible addition to the National Recreation Trails system in 1979 and in fact was recommended for nomination pending securing rights-of-way across private lands within the Forest boundary. Conditions described in the 1979 Environment Assessment have not significantly changed, and the trail meets all the criteria established for a National Recreation Trail.

The Tevis Cup Trail, approximately 21 miles in length, was also evaluated and found suitable, although it was not designated at the time because of potential problems with location and trail construction standards. The existing trail along Red Star ridge, or Tevis Cup Trail, would be a logical addition for designation along with the proposed Western States National Recreation Trail. Some minor trail relocation, improvements, and acquisition of rights-of-way are needed for the Tevis Cup Trail. The designation of both the Western States and Tevis Cup Trails would tie in with the existing National Recreation Trail from Sacramento to the Forest boundary on the west and with the Pacific Crest Trail on the east.

F. ENVIRONMENTAL OR RESOURCE IMPACTS ASSOCIATED WITH NATIONAL RECREATIONAL TRAIL DESIGNATION

Impacts of designation of both the Western States and the Tevis Cup Trails are described in the Environment Assessment approved on January 17, 1979. This report is incorporated by reference. The primary purpose of a National Recreation Trail is to provide for outdoor recreation uses. The act of designation of a National Recreation Trail will not produce any significant adverse changes or modification of existing uses or management along this trail. Recreation use will be expected to increase gradually with increased publicity about the trail, but these increases are not expected to significantly alter existing uses nor have any significant adverse environmental or resource impacts. There is a need for some minor relocation and reconstruction to accommodate existing uses. This work would still be needed without designation.

G. RECOMMENDATION

Based on the Environmental Assessment (EA) completed in 1979, and review of that EA, along with the public input that the Forest has received both as a result of review of the Draft Forest Plan and at meetings related specifically to management of the trail, designation of both the Western States and the Tevis Cup Trails to the National Recreation Trail System is recommended when rights-of-way (ROWs) across private land have been secured. In the interim, the Trails will be managed in a manner compatible with National Recreation Trail status. In addition, it must be recognized that although neither trail qualifies for National Historic or Scenic Trail status, the trails do have historic and scenic values and significance to some users, and strong considerations should be given to maintaining the integrity of these qualities in management decisions.

Within one year of approval of this Plan, a Trail Management Plan will be developed and will include at least the following:

- 1) Broad trail management objectives.
- 2) Action plan or schedule to secure all necessary ROWs
- 3) Trail project priority listing and proposed scheduling.
- 4) A schedule to nominate the qualified seven-mile segment of Western States trail to the National Register of Historic Places.

APPENDIX K

IDENTIFICATION OF LANDS TENTATIVELY CAPABLE, AVAILABLE, & SUITABLE
FOR TIMBER MANAGEMENT

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APPENDIX K

IDENTIFICATION OF LANDS TENTATIVELY CAPABLE, AVAILABLE, AND SUITABLE FOR TIMBER MANAGEMENT

I. INTRODUCTION

Section 6(g)(2)(A) of the Resource Planning Act of 1974, as amended by the National Forest Management Act of 1976, is quoted as follows:

"Require the identification of the suitability of lands for resource management."

Section 6(g)(3)(A) states that guidelines for land management plans developed to achieve the goals of the program (RPA) which insures consideration of the economic and environmental aspects of various systems of renewable resource management, including the related systems of silviculture and protection of forest resources, will provide for outdoor recreation (including wilderness), range, timber, watershed, wildlife, and fish. The land suitability assessments required under the RPA/NFMA planning process state there shall be a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences.

The Act provides very little direction to the form which this 'systematic interdisciplinary approach' plan shall take. The Secretary is directed under Section 6(g) to issue regulations which set forth the process for developing land and management plans, and which provide guidelines and standards for analyzing suitability of various forms of resource management

Section 219.3, Definitions of National Forest Management Act Regulations (9/17/79), and the amended version of 36 CFR 219 (1/1/82), provide the same definition of suitability as follows:

"The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of economic and environmental consequences and the alternative uses forgone. A unit of land may be suitable for a variety of individual or combined management practices"

Furthermore, under 36 CFR 219.3, the National Forest Management Act Regulations (9/17/79) and the amended Regulations, effective 11/1/82 and referenced above, state capability as follows:

"**Capability:** the potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils, and geology, as well as the application of management practices such as silviculture or protection from fire, insects, and disease"

In concurrence with the TNF Management Team's recommendation, the Forest Supervisor approved the process titled, 'Guidelines for Identification of Suitable Practices (7/23/80, revised 2/81)' as documented in the 'Tahoe National Forest Reference Book of Practices', specifically, page A7 of the Appendix. This process emphasized that it was a guideline for the identification of capable and suitable lands for resource management. It also indicated that since capability determination is clearly linked with suitability, guidelines for identifying capability and suitability are necessary.

II. PURPOSE

There are three purposes for identifying available, capable, and suitable criteria for each resource: inventory, management potential, and priorities for allocating and scheduling prescriptions.

Inventory of lands that are currently available, capable, and tentatively suitable for each resource activity or opportunity is necessary to determine how much (acres of) land we have for different resources. In some instances we know that certain lands are currently being used to support a specific resource or opportunity; e.g. cross-country skiing. We need to determine exactly what the intrinsic or inherent characteristics (capability criteria) are for these lands that make them desirable and capable to support cross-country skiing. After we determine which lands are capable for supporting cross-country skiing, we would need to determine which ones are available. Availability was determined by legislative or administrative actions; e.g., certain areas of the Onion Creek Experimental Forest, established for watershed research, such as experiments determining depth of snow, etc., would not be compatible with cross-country skiing. Therefore, cross-country skiing would probably be prohibited.

Following the determination of the criteria for available, capable, and tentatively suitable lands, they were documented on the "TNF Capability/ Suitability Criteria" form with necessary supporting narratives. These criteria will next serve the second purpose to determine the resource potentials on the Forest.

Identification of the existing resource potential on the Forest for any particular resource activity or Opportunity using the ACS criteria identified above will display the extent to which the Forest can meet expected future resource demands. The TNF Planning File, other resource data bases (maps, computer programs, etc.) and knowledge of the ID and Management Teams will be used to identify the lands that are tentatively available, capable, and suitable for this potential improvement, development, or opportunity.

Prioritizing the forest land for resources tentatively suited for the land will ultimately result in the final decision of the best management prescription for each area. This is not only a complicated analytical process, but also involves a great deal of common sense. FORPIAN will provide some of the information for this allocation, particularly for resources with quantitative information in the model. The Management Team will make the final decision augmenting FORPIAN with a well thought out, logical, and documented planning process.

III. PROCEDURE

Members of the Management Team selected resource practices, activities, and opportunities for which available, capable, and suitable criteria were developed.

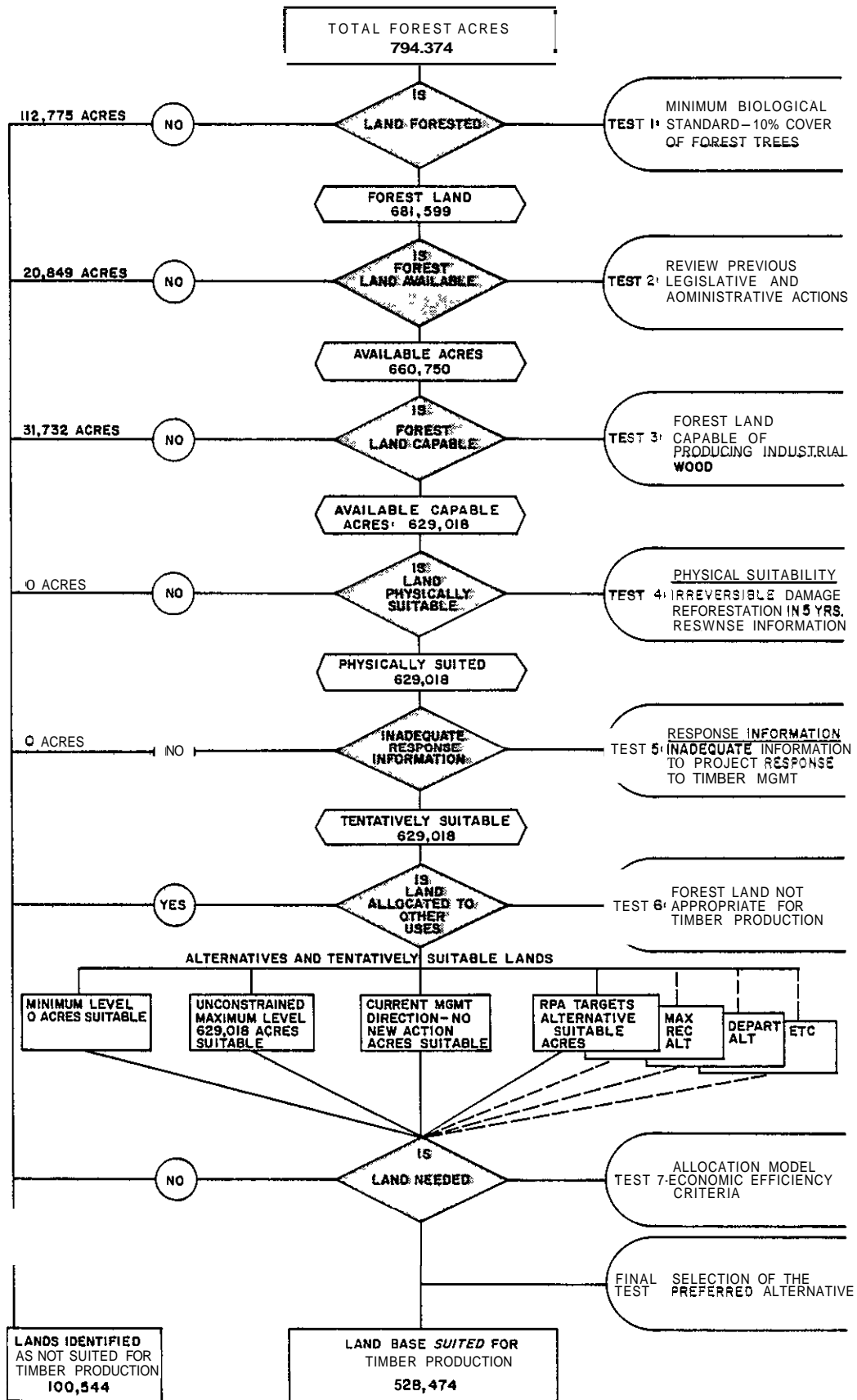
The three major headings for which criteria were developed are recreation, fisheries and wildlife, timber and range (including roads and fuels). This appendix deals exclusively with the timber resource.

IV AVAILABLE, CAPABLE, AND SUITABLE CRITERIA

The following is the list of available, capable, and suitable criteria developed for the timber resource as determined appropriate by the ID and Management Teams. These criteria were recommended for approval by the Management Team and approved by the Forest Supervisor on February 22, 1982. Some of these criteria differ in format based on WO and RO requirements. For example, the timber ACS criteria involve narratives describing the criteria along with acreage figures.

As stated earlier in this document, the purpose for the tentative identification of available, capable, and suitable criteria is in the development of prescriptions and the final resolution of conflicts between competing resources or activities. A compatibility matrix was completed and approved by the Forest ID and Management Teams in February of 1981. The purpose of this compatibility matrix was to identify which practices or activities were incompatible with other practices or activities. This is documented in the Practice/Compatibility Matrices and Guidelines in the 'Reference Book of Practices', issued May 1981.

Figure K.1 - Process of Identifying Lands Suited for Timber Production



V. POLICY REQUIREMENTS

The TNF identified all lands available, capable, and suitable for timber production on 1:24000 scale color aerial photographs. These land classifications were transferred to 1:24000 scale primary base topographic maps in the form of timber type designations. The aerial photographs and timber type maps are part of the planning records filed at the Supervisor's Office in Nevada City. The timber type maps along with other resource maps were used to establish capability areas for the Forest plan map (see TNF Planning File, August 1988). The policy for identifying timber resource land suitability is described in FSM 2412, 1/84 Amendment 134.

VI. TIMBER RESOURCE LAND SUITABILITY

Tahoe National Forest System lands were analyzed in the systematic process required by FSM 2412. See Figure K.1. All 794,374 acres within the National Forest boundary were classified using 5/10/85 Planning File data in the following categories:

A Forest and Nonforest Land

1. Nonforest Land

The TNF identified land that has never supported forests and lands formerly forested where use for timber utilization is precluded by development for other use. [Note: Includes areas used for crops, improved pasture, residential or administrative areas, improved roads of any width and adjoining clearings, and powerline clearing of any width. If intermingled in forest areas, unimproved roads (the Forest includes approximately 15,000 acres of unimproved roads that are less than 120-foot wide. (See FSM 2410.5--3)) and nonforest strips must be more than 120-foot wide, and clearing more than ten acres in size to qualify as nonforest land.] The nonforest land is classified as land not suited for timber production.

Table K.I lists nonforest lands which are classified as not suited for timber production.

TABLE K.I - TAHOE NATIONAL FOREST NONFOREST LAND

Stratum *	Description	Acres	% of Nonforest Land
NW	Water	10,124	9.0
GX	Grass	6,974	6.2
SX	Mixed brush	64,535	57.2
NB	Barren (includes improved roads)	30,910	27.4
CL	Cultivated	119	0.1
ND	Urban	113	0.1
	TOTAL NONFOREST	112,775	100.0

* Strata labels used throughout this appendix are described in Appendix H of the Forest Plan.

2. Forest Land Land at least 10-percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for nonforest use. Lands developed for nonforest use include areas for crops, improved pasture, residential or administrative areas, improved (constructed) roads of any width and adjoining road clearing, and powerline clearing of any width. The term occupancy, when used to define forest land, shall be measured by canopy cover of live forest trees at maturity. On the TNF, forested land includes the following.
 - a. All forested land with at least ten percent crown closure of forest trees as viewed on the 1977 color 1:24,000 aerial photography.
 - b. Reforestation backlog lands identified by Ranger District field inventories and coded into the TNF planning file as BL
 - c. Current clearcuts coded as NX in the TNF planning file.
 - d. Release and precommercial thinning backlogs identified by Ranger District personnel and coded into the planning file with appropriate backlog codes and not containing merchantable timber.
 - e. Existing plantations as coded into the TNF planning file as MPL, RPL, or EPL

Timber type maps were updated in 1980 and 1983 to reflect major changes from timber harvest, such as new plantations. Note: Strata acreages in Appendix H of the Forest Plan are from the original 1980 inventory and do not reflect type map updates.

Table K.2 lists the forest land on the Tahoe National Forest.

- B. **Forest Land Withdrawn From Timber Production.** Forest land which has been legislatively withdrawn or administratively withdrawn from timber production by the Secretary or Chief of the Forest Service is not available. Forest land not available is classed as not suited for timber production. Lands currently designated
 1. The Onion Creek Experimental Forest was established under Reg. U-4, 12/4/58, by Acting Chief Harper for watershed research purposes.
 2. The North Fork American Wild River was classified by Congress (P.L. 95-625, 11/10/78, amended P.L. 90-542, 10/2/68), and subsequent Management and Development Plan 10/3/79, 'precludes cutting of trees except when needed in association with a primitive recreation experience.' (North Fork American Wild River Management and Development Plan. October 3, 1979)
 3. The California Wilderness Act of 1984 designated 18,705 acres of the Granite Chief RARE II Area as Wilderness.

TABLE K.2 - TAHOE NATIONAL FOREST - FOREST LANDS.

STRATUM	ACRES	PERCENT OF FOREST LAND
MAJOR CONIFERS		
MPL	20,442	3.0
	27,100	4.0
	73,779	10.8
	95,261	14.0
M4P	82,235	12.0
	66,315	9.7
	3,918	0.6
	369,030	54.1
RPL	850	0.1
	4,510	0.7
	18,242	2.7
	18,238	2.7
	27,692	4.0
	40,979	6.0
	110,511	16.2
EPL	6,386	1.0
E2N	7,217	1.1
E3S	28,919	4.2
	51,235	7.5
	10,524	1.5
	104,281	15.3
	4,551	0.7
	5,029	0.7
	9,580	1.4
X3P	17,230	2.5
X4P	20,211	3.0
Total	37,441	5.5
NX	6,439	1.0
	7,597	1.1
Total	14,036	2.1
RELEASE NEEDS		
HB	35	-
HL	27	-
SX	2,046	0.3
Gx	112	-
Total	2,220	0.3
PRECOMMERCIAL THINNING NEEDS		
SX	153	
Gx	12	
Total	165	
HARDWOODS		
HA	75	
HL	26,456	3.9
HB	5,846	0.9
Total	32,377	4.8
MISCELLANEOUS CONIFERS		
KK	285	0.1
KF	1,534	0.2
KD	139	
Total	1,958	0.3
TOTAL TNF LAND	681,599	100.0

Table K.3 lists the forest lands withdrawn from timber production on the TNF

TABLE K.3 - ACRES OF TNF FOREST LAND WITHDRAWN FROM TIMBER PRODUCTION

Stratum	Onion Creek	N.F. American	Granite Chief	Total
L3G	103	22	281	406
L3P	0	0	133	133
M2N	24	117	184	325
M3G	445	315	877	1,637
M3P	162	686	556	1,404
M4G	292	154	361	807
M4P	190	1,219	1,558	2,967
M6G	0	44	49	93
R2N	56	0	215	271
R3G	277	0	1,162	1,439
R3P	144	0	2,354	2,498
R4G	759	0	2,343	3,102
R4P	82	0	2,301	2,383
X3P	0	404	154	558
X4P	0	134	89	223
HB	0	129	67	196
HL	0	2,210	197	2,407
TOTAL FOREST LAND	2,534	5,434	12,881	20,849
NONFOREST LAND	468	640	5,824	6,932
TOTAL ACRES	3,002	6,074	18,705	27,781

TOTAL TNF FOREST LAND NOT WITHDRAWN FROM TIMBER PRODUCTION - 660.750 ACRES.

- C. **Forest Land Incapable of Producing Industrial Wood.** Lands that are not capable of producing crops of industrial wood (industrial crops of wood are conifer sawlogs with dimensions defined in the Regional Guide.) are by definition to be classified as unsuitable for timber production. Species of trees that are not currently utilized or not expected to be utilized within the next 10 years constitute the primary criterion for assigning lands to this category. Incapable forest land is classed as land not suited for timber production. Lands classed as nonproductive forest land on the TNF are indicated in Table K 4 and will be considered as not capable of timber production for industrial wood products

TABLE K.4 - TAHOE NATIONAL FOREST INCAPABLE FOREST LAND

Stratum	Description	Acres	Nonproductive Forest Land
HA HL	Hardwoods - Aspen Hardwoods - Noncommercial species, i.e., liveoak	75 24,049	0.3 75.0
HB	Hardwoods - Commercial species i.e., blackoak, madrone, tanoak. NOTE: Even though the label describes these forested lands as 'commercial species,' they are considered as nonproductive forest land for this planning period. They are potentially commercial hardwood species. Current use for these species include fuelwood, chips, and some sawlogs.	5,650	17.8
KK	Knobcone pine - Noncommercial species	285	0.9
KF	Juniper or pinyon pine - Non-commercial species	1,534	4.8
KD	Digger pine - Noncommercial species	139	0.4
	TOTAL NONPRODUCTIVE FOREST LAND	31,732	100.0

TOTAL AVAILABLE AND CAPABLE FOREST LAND FOR TIMBER PRODUCTION - - 629,018 ACRES

D. **Physically Suitable Forest Land.** Determination of suitability is the process of ascertaining 'the appropriateness of applying certain resource management practices to a particular area of land, as determined by analysis of economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices' (219.3). Lands capable and available for timber production as previously described are evaluated for physical suitability utilizing a two-stage test (219.12(b), and FSM 2412 14).

All timber producing lands capable and available were evaluated for two tests of physical suitability. The first test was to determine if technology is available that will ensure timber production, including harvesting, from the land without irreversible resource damage to soil productivity or watershed condition. Availability of technology was judged on whether technology is currently developed and available for use. This is not an economic test, and the technology did not have to be available in the TNF. The second test for physical suitability is whether there is reasonable assurance that such lands can be adequately restocked within five years after final harvest.

1. Test 1 - Is technology available that will ensure timber production, including harvesting, from the land without irreversible resource damage to soil productivity or watershed condition?

The test determining the potential for irreversible damage to soil productivity found that no productive forest land could be classed as not suited for timber production. This determination was based upon consideration of current technology, available information and research.

data, soils resource information, current harvesting and post-sale practices and impacts, lack of land instability, and required erosion control practices.

The second aspect of this test concerns irreversible damage to the watershed condition. Considering all of the factors described above plus the requirements contained in Best Management Practices and existing water quality standards, no productive forest land is classified as not suited for timber production.

As a result of the first test of physical suitability, no productive forest land on the TNF is classed as not suited for timber production.

2. Test 2 -The second test for physical suitability is whether there is reasonable assurance that such lands can be adequately restocked within five years after final harvest. The criterion for determining adequate restocking and guidelines for determining final harvest are found in FSM 1922.24(f) as follows.

When trees are cut to achieve timber production objectives, the cuttings will be made in such a way as to assure that lands can be adequately restocked within five years after final harvest. Research and experience indicate that the harvest and regeneration practices planned can be expected to result in adequate restocking. Adequate restocking means that the cut area will contain the minimum number, size, distribution, and species composition of regeneration as specified in regional silvicultural guides attached to the Forest Plan for each forest type. Five years after final harvest means five years after clearcutting, five years after final overstory removal in shelterwood cutting, five years after the seed tree removal cut in seed tree cutting, or five years after selection cutting.'

The minimum number of trees per acre for adequate restocking was established in the Regional Guide by Forest type as follows

Forest Type	R-5 Site Class	Number of Trees Recommended	Minimum Acceptable for Certification
Ponderosa Pine	I	200	150
	II	200	125
	III	150	100
	IV	125	75
Red & White Fir	All	300	200
Douglas-fir	All	225	125
Mixed Conifer	All	200	150
Lodgepole Pine *	All	200	150

* The Regional Guide did not establish minimum stocking goals for lodgepole pine type.

Productive forest lands capable and available for timber production are considered physically not suited for timber production if they cannot be reforested according to the standards described above.

Analysis of previous reforestation efforts indicate all productive forest land on the TNF can be reforested in accordance with the established standards. This determination is based upon consideration of current reforestation practices; improvements in nursery technology and seedling physiology; planting stock processing from the nursery to the planting site, local studies concerning reforestation of harsh sites; planting site requirements necessary for seedling survival and growth, and use of the shelterwood cutting method to aid in reforesting difficult sites

Reforestation problems on the TNF have been associated primarily due to inadequate site preparation or lack of prompt control of competing vegetation. The competing vegetation determines what plants are allowed to use the water stored in the soil profile. Available technology for discriminating against undesirable plants competing with conifers for survival and growth include site preparation and release using mechanized equipment, selective herbicides, manual cutting, grazing by cattle and sheep, fire, and combinations of these methods

Under this second test of physical suitability, therefore, all capable and available productive forest land is tentatively suitable for timber production.

TOTAL FOREST LAND CAPABLE AND AVAILABLE FOR TIMBER PRODUCTION AFTER THE PHYSICALLY SUITABLE TEST - - - - - 629,018 ACRES.

- E Inadequate** Response Information. Forest land shall be classified as unsuitable for timber production if there is not adequate information available, based on current research and experience, to project responses to timber management practices. These lands shall be identified as needing further inventory, research, or information and shall not be considered as part of the tentatively suitable land base until such time that adequate response data are available. These lands included forest types such as pinyon-juniper, knobcone, digger pine, and sites with less than ten percent crown closure. These forest lands were eliminated from the suitable land base as incapable forest land.

TOTAL FOREST LAND CAPABLE AND AVAILABLE FOR TIMBER PRODUCTION AT THE INADEQUATE RESPONSE INFORMATION TEST - - - - - 629,018 ACRES.

- F. Tentatively Suitable Forest Lands** Tentatively suitable forest lands include all 629,018 acres determined available, capable, physically suited, and having adequate response information from the criteria previously described. Table K.5 indicates the tentatively suitable forest lands by stratum for the TNF

TABLE K.5 -TAHOE NATIONAL FOREST LANDS TENTATIVELY SUITABLE FOR TIMBER PRODUCTION

STRATUM	ACRES	PERCENT OF FOREST LAND
MAJOR CONIFERS		
MPL	20,422	3.2
M2N	26,775	4.3
M3P	72,375	11.5
M3G	93,624	14.9
M4P	79,268	12.6
M4G	65,508	10.4
M6G	3,825	0.6
Total	361,797	57.5
RPL	850	0.1
R2N	4,239	0.7
R3P	15,744	2.5
R3G	16,799	2.7
R4P	25,309	4.0
R4G	37,877	6.0
Total	100,818	16.0
EPL	6,386	1.0
E2N	7,217	1.1
E3S	28,919	4.6
E3N	51,235	8.2
E4N	10,524	1.7
Total	104,281	16.6
U P	4,418	0.7
L3G	4,623	0.8
Total	9,041	1.5
X3P	16,672	2.6
X4P	19,988	3.2
Total	36,660	5.8
BL	6,439	1.0
NX	7,597	1.2
Total	14,036	2.2
RELEASE NEEDS		
HB	35	
HL	27	
SX	2,046	0.3
GX	211	
Total	2,220	0.4
PRECOMMERCIAL THINNING NEEDS		
SX	153	
GX	12	
Total	165	

TOTAL TENTATIVELY SUITABLE PRODUCTIVE FOREST LAND 629,018 ACRES

TABLE K.6 - SUMMARY OF FOREST LANDS IDENTIFIED AS NOT SUITED AND TENTATIVELY SUITABLE FOR TIMBER PRODUCTION FOR ALL ALTERNATIVES

LANDS NOT SUITED	ACRES
A.Total Tahoe National Forest Land	794,374
1.Non forest	112,775
2.Forest land withdrawn from timber production	20,849
3 Forest land incapable of producing industrial wood	31,732
4 Physically unsuited for timber production	0
5.Inadequate response information	0
B.Total not suited for all alternatives	165,356
C.Forest land tentatively suitable for all alternatives	629,018

VII. FINANCIAL ANALYSIS

A. Introduction. The financial analysis test of forest land for suitability does not by itself classify land as not suited for timber production. The purpose of the test is not to say that a single analysis area (e.g., reforestation areas on slopes greater than 30%) is not economically efficient. The purpose of the analysis is to organize capable, available, and tentatively suitable timber producing lands into analysis areas that significantly affect timber management costs and values at various levels of management intensities (prescriptions). Capable and available forest land will be considered as economically suitable for timber production if, and only if, it is included in the set of lands that are efficient in meeting the timber production goals for the Forest Plan

Lands on the Tahoe National Forest were organized into approximately 80 separate analysis areas (see Appendix E, The Modeling and Analysis Process, FORPLAN, for complete details) Following is a description of each level identifier and a brief discussion on how it will be used to effect economic efficiency and suitability for timber productions

B. Level identifiers.

1. Level I - Land Designation. Special areas within the TNF such as Granite Chief Wilderness, recreation development sites, ski areas, etc., where timber management activities are precluded or have special cost factors associated with management of the timber resource.
2. Level II - Special Land Designations. Specific areas such as special use areas, research sites, developed recreation sites, etc., are displayed in this identifier. Such land areas can be unsuited for timber production due to other multiple-use reasons depending upon the theme and objective of the alternative.
3. Level III - Access or designated land type. Lands are described as being currently accessed or not accessed. Lands that are accessed will require road reconstruction and maintenance. Lands unaccessed will require new road construction and maintenance. Each has a separate cost per mile and will be included as a portion of the cost analysis for the economic efficiency determination.
4. Working Group - Forest type classification. Affects the timber yield values for existing and regenerated timber stands.

5. Land Class - Represents the average slope class of an analysis area. Three slope group classifications are used and affects the following cost. Logging, post-sale treatments, and road construction, reconstruction, and maintenance.
6. Condition Class - Size class of the existing timber. Affects the value of the existing timber and applicability of prescription

For example, M3P is not suitable for a shelterwood prescription because of a lack of suitable seed trees.

Timber producing lands are divided by these six analysis area characteristics for FORPLAN computer analysis. When a certain resource management emphasis and prescriptions are applied to each analysis area, the FORPLAN program analyzes and displays economic data, such as present net value (PNV), discounted cost, and values for the lands economically efficient in meeting the objective of the alternative under consideration. (See resource management emphasis for FORPLAN for further information.) If lands with a marginal or low economic opportunity are not necessary to solve the objective, they will not be selected as suitable timber producing lands.

Following is a PNV analysis of two analysis areas to demonstrate the relative economic values of the best and worst cases. Analysis area one is an Undesignated, Accessed, Mixed Conifer, 6 size class, good stocking, on 0 to 30 percent slope. Analysis area 2 is Undesignated, Unaccessed, Eastside Pine, 3 size class, sparse stocking, on 51+ percent slope, without the use of herbicides. The economic analysis uses a 4 percent rate for discounting as described in FSM 1971.51.

TABLE K.7 - ECONOMIC ANALYSIS OF SAMPLE ANALYSIS AREA 1 representing stratum M6G, 0 to 30 percent slope group, and accessed. A 4 percent interest rate was used for discounting All values, cost and yield are per acre.

Activity	Time	Present Value	Present Cost	Volume Harvested
Sale Prep.	1	--	\$551	8.61 MCF
Clearcut	1	\$10,547		
Road Reconst.	1	--	32	
Road Mtc.	1	--	29	
Logging Cost	1	--	2,471	
Site Prep & Plant	3	--	403	0.56 MCF
Release	5	--	169	
Pre Com. Thin	15	--	224	
Sale Prep.	40	--	35	
Com Thin	40	686	--	
Logging Cast	40	--	221	0.83 MCF
Road Mtc.	40	--	51	
Sale Prep	60	--	53	
Com Thin	60	1,017	--	
Logging	60	--	31	
Road Mtc.	60	--	51	5.96 MCF
Sale Prep.	EO	--	381	
Clearcut	80	7,301	--	
Logging Cost	80	--	1,710	
Road Mtc.	80	--	51	

	With Final Clearcut	Without Final Clearcut
Discounted Cost	\$-3,900.87	\$-3,807.95
Discounted Value	11,103.31	10,786.56
PNV	7,202.44	6,978.62
Benefit Cost Ratio	2.8464	2.8326

TABLE K.8 • ECONOMIC ANALYSIS OF SAMPLE ANALYSIS AREA 2 representing Stratum E3S, 51+% slope group, and unaccessed A 4% interest rate was used for discounting All costs, values, and yields are per acre.

Activity	Time	Present Value	Present Cost	Volume Harvested
Sale Prep	1	--	\$28	
Clearcut	1	\$539	--	0.44 MCF
Road Reconst.	1	--	596	
Road Mtc.	1	--	29	
Logging Cost	1	--	237	
Site Prep & Plant	3	--	407	
Release	5	--	296	
Pre Com. Thin	15	--	224	
Sale Prep	70	--	4	
Com. Thin	70	74	--	0.06 MCF
Logging Cost	70	--	37	
Road Mtc.	70	--	51	
Sale Prep.	90	--	97	
Logging	90	--	812	
Road Mtc	90	--	51	
Clearcut	90	1,850	--	15.1 MCF

	With Final Clearcut	Without Final Clearcut
Discounted Cost	\$-1,653.54	\$ -1,625.40
Discounted Value	597.97	543.75
PNV	-1,055.56	-1,081.65
Benefit Cost Ratio	0.3616	0.3345

Prescription	PNV Final Clearcut Included	PNV Without Final Clearcut
Clearcut stand now	\$-1,055.56	\$-1,081.65
Clearcut stand in 100 years	-20.90	-21.42
Clearcut stand in 160 years	-1.99	-2.04

not program the harvest of E3S until later periods in the planning horizon unless noneconomic circumstances force the prescription to be implemented earlier.

TABLE K.9 - ECONOMIC ANALYSIS OF SAMPLE ANALYSIS AREA 2 representing Stratum E3S, 51+% slope group, and unaccessed A 4% interest rate was used for discounting. FIRST ENTRY DELAYED 100 YEARS All values, costs, and yields are per acre.

Activity	Time	Present Value	Present Cost	Volume Harvested
Sale Prep	100		\$28	
Clearcut	100	\$539	--	0.44 MCF
Road Reconst	100	--	596	
Road Mtc.	100	--	29	
Logging Cost	100	--	237	
Site Prep. & Plant	103	--	407	
Release	105	--	296	
Pre Com. Thin	115	--	224	
Sale Prep.	170	--	4	
Com. Thin	170	74	--	0.06 MCF
Logging Cost	170	--	37	
Road Mtc.	170	--	51	
Sale Prep.	190	--	97	
Clearcut	190	1,850	--	1.51 MCF
Logging Cost	190	--	812	
Road Mtc.	190	--	51	

	With Final Clearcut	Without Final Clearcut
Discounted Cost	\$-32.74	\$32.18
Discounted Value	11.84	10.77
PNV	-20.90	-21.42
Benefit Cost Ratio	0.36160	0.3345

TABLE K.10 - ECONOMIC ANALYSIS OF SAMPLE ANALYSIS AREA 2 representing Stratum E3S, 51+% slope group, and unaccessed. A 4% interest rate was used for discounting. FIRST ENTRY DELAYED 160 YEARS or end of planning period. All values, costs, and yields are per acre

Activity	Time	Present Value	Present Cost	Volume Harvested
Sale Prep.	160	--	\$28	
Clearcut	160	\$539		0.44 MCF
Road Reconst	160	--	596	
Road Mtc	160	--	29	
Logging Cost	160	--	237	
Site Prep.& Plant	163	--	407	
Release	165	--	296	
Pre Com. Thin	175	--	224	
Sale Prep.	230	--	4	
Com. Thin	230	74	--	0.06 MCF
Logging cost	230	--	37	
Road Mtc	230	--	51	
Sale Prep.	250	--	97	
Clearcut	250	1,850		151 MCF
Logging	250	--	812	
Road Mtc.	250	--	51	

	With Final Clearcut	Without Final Clearcut
Discounted Cost	\$311	\$306
Discounted Value	1.13	1.03
PNV	-1.99	-2.04
Benefit Cost Ratio	0.3616	0.3345

APPENDIX L

MAJOR SILVICULTURAL SYSTEMS AND THEIR APPLICATIONS

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APPENDIX L

MAJOR SILVICULTURAL SYSTEMS AND THEIR APPLICATION

INTRODUCTION

This appendix describes the major silvicultural systems used in land management planning for the Tahoe National Forest, and the advantages and disadvantages of each, *considering both* biological and managerial perspectives. Additionally, almost all of the information in this appendix applies to selecting an appropriate silvicultural system for a particular stand.

Silvicultural systems are used to manage forest stands. A **silvicultural** system is a planned sequence of treatments for controlling the species composition and structure of the vegetation during the life of a stand. A stand is a community of trees sufficiently uniform to be distinguishable as a silvicultural or management *unit*. Typically, stand sizes vary from about 5 to over 30 acres on National Forest System lands.

Management objectives for stands typically are **combinations** of forest products and amenities. An example is: specific amounts of livestock forage, water runoff, and wood products; kinds of wildlife habitat; and specific scenic view qualities. No single silvicultural system can produce all desired combinations of products and amenities from a particular stand, or from a National Forest.

Forests are managed by using combinations of silvicultural systems to achieve the forest management objectives. All of the silvicultural systems discussed here are used in the National Forests in California. The combinations vary greatly, depending on the characteristics of local forest ecosystems and differing management objectives.

Selection of the appropriate silvicultural systems occurs at both the National Forest land management planning level and Ranger District project level. The Forest's selection is based on a broad match of silvicultural systems with the overall planning objectives and ecological characteristics of broadly-defined land classes. Examples of land classes are: areas capable, available, and suitable for growing commercial wood products; streamside management zones; and spotted owl habitat management areas. At the Ranger District, project-level selection of silvicultural systems is typically made by a certified silviculturist. Choices are based on matching the attributes of the silvicultural systems with specific management objectives and the ecological characteristics for specific stands.

DESCRIPTIONS OF THE SILVICULTURAL SYSTEMS

A silvicultural system typically includes cutting trees, growing new trees, and controlling competing plants. Cuttings are classified as regeneration cuttings (those that help to replace stands), and Intermediate cuttings (those that maintain or improve the character of existing stands).

Silvicultural systems are not just the creation of foresters; rather, they are adaptations of natural occurrences. Nature makes 'regeneration cuttings' by means of fire, insects, disease, wind, and other phenomena by removing a single tree, a small group of trees, a stand, or sometimes a whole forest.

Regeneration cuttings strongly influence stand Characteristics and management options. Therefore, the 5 major silvicultural systems are named after them: clearcutting, seed-tree, shelterwood, **single-tree selection**, and **group selection**. Each of these systems includes regeneration cuttings to establish new tree seedlings or sprouts, and intermediate cuttings (see glossary) to develop the desired stand characteristics, such as species composition, spatial distribution, and plant vigor.

The clearcutting, seed-tree, and shelterwood systems are even-aged systems: this means that all of the trees in the stand are about the same age for almost all the life of the stand. The single-tree and group

selection systems are uneven-aged systems: the trees in the stand differ markedly in age, with at least three major age classes present. Uneven-aged stands have no beginning or end points in time.

Even-aged Systems

Clearcutting is the harvesting, in one operation, of all merchantable trees in a stand or a larger area to reestablish a new even-aged stand. The new stand may be created by natural processes such as seeding from trees in adjacent stands, or by sprouting from the stumps or roots of the cut trees. The new stand can also be created by man through broadcast scattering of seeds or by planting seeds or seedlings. In California, clearcut stands are usually regenerated by planting seedlings. (The clearcutting silvicultural system is illustrated in Figure 1.)

Clearcutting does not necessarily mean that all unmerchantable trees are removed. Where feasible, high-quality unmerchantable trees are saved to become part of the new stand. A 1987 survey showed that on gentle terrain in the National Forests on the western slope of the Sierra Nevada mountains, high-quality unmerchantable trees are being retained on an average of about 10 and 20 percent of the acres being regenerated to ponderosa pine, and to red fir or white fir, respectively.

The shelterwood system (Figure 3) requires leaving sufficient trees per acre (typically 10 to 20) during the regeneration cutting to provide an environment that protects (shelters) the seedlings of a new even-aged stand. Protection may be needed from excessive moisture stress or frosts in some forest areas. The new stand can be created by the natural or artificial processes described above.

Regeneration by planting seedlings under shelterwoods is a common practice on National Forest lands in the Region. The shelterwood trees are harvested following establishment of the seedlings of the new even-aged stand. The shelterwood system is the second-most commonly used even-aged system on National Forest lands in Region 5, after the clearcutting system. The shelterwood system is most commonly used in stands where red or white fir are to be regenerated.

The seed-tree system (Figure 2) requires leaving a few good seed-producing trees per acre (typically about 3 to 10) during the regeneration cutting. These trees produce the seed needed to establish a new even-aged stand. Following seedling establishment, the seed trees are harvested. This system has seldom been used for intensive timber management on the Tahoe National Forest. The primary reasons are frequent unreliability of natural regeneration, invasion of cleared lands by unwanted vegetation (particularly shrubs), and the poor economics of harvesting the few seed trees after natural seedlings were established.

Uneven-aged Systems

In the single-tree selection system (Figure 4), each tree is evaluated for its contribution to the desired characteristics of the uneven-aged stand. Regeneration and intermediate cuttings are usually done in one operation. The desired seedlings or sprouts grow in the spaces created by harvesting of individual trees.

Repeated selection cuttings, part of the single-tree selection system, have been used frequently to manage National Forest lands, particularly in the Sierra Nevada and Cascade Mountain Ranges. A major shift to using the clearcutting or shelterwood systems has occurred over the last two decades. The primary reason is that the selection cuttings caused significant understocking in many stands, thereby reducing productivity. Many examples of poor selection cuttings exist in California. This cutting occurred under the guise of the single-tree selection system. High quality, large trees were cut, leaving inferior, small trees. Genetic principles were ignored. Many stands were left understocked with slow-growing, small trees that are more susceptible to attacks by insects and diseases. In these situations, establishing a new even-aged stand typically is the most efficient way of regaining desired productivity levels and other stand qualities.

The group selection system requires harvesting trees in small groups (less than about 2 acres). The openings created in the stand resemble miniature clearcuts. The uneven-aged stand consists of a mosaic of even-aged groups. Thus, the group selection system uses the principles of even-aged systems described above to manage much smaller units of land. Currently, the group selection system is used less frequently than the single-tree selection system on the National Forest lands in Region 5.

Even-aged systems are more practical than uneven-aged systems for intensive management of wood products. The reasons are explained in the section below on 'MANAGERIAL CONTRASTS..'

TIMBER YIELD AND REGULATION OF FORESTS AND STANDS

Timber yield is the amount of wood that is harvested periodically from a specified forest area. The maximum yield allowed from a National Forest for a planning period (typically one decade), is called the allowable sale quantity, or ASQ. By Federal law, the allowable sale quantity generally cannot exceed the long-term, sustained yield capacity of that Forest to grow wood. Within each National Forest, stands are managed by silvicultural systems to achieve continuous production of the allowable sale quantity.

When this continuous production level is achieved, the Forest and stands are said to be 'regulated'. Where the single-tree selection or group selection silvicultural systems are used, each regulated stand would produce approximately the same yield from each harvest, which would occur about every 10 years. In contrast, where the even-aged systems are used, yields from each harvest in a regulated stand would not be equal, but the average yield for the Forest would be the same. The conversion of wild stands to regulated stands in many of California's forests has just begun. The goal of regulation will take many decades to achieve. No major forest in California has yet been regulated.

BIOLOGICAL CONTRASTS AMONG FORESTS AND STANDS MANAGED BY DIFFERENT SILVICULTURAL SYSTEMS (The key biological contrasts discussed in this section are summarized in Table 1.)

Appearance

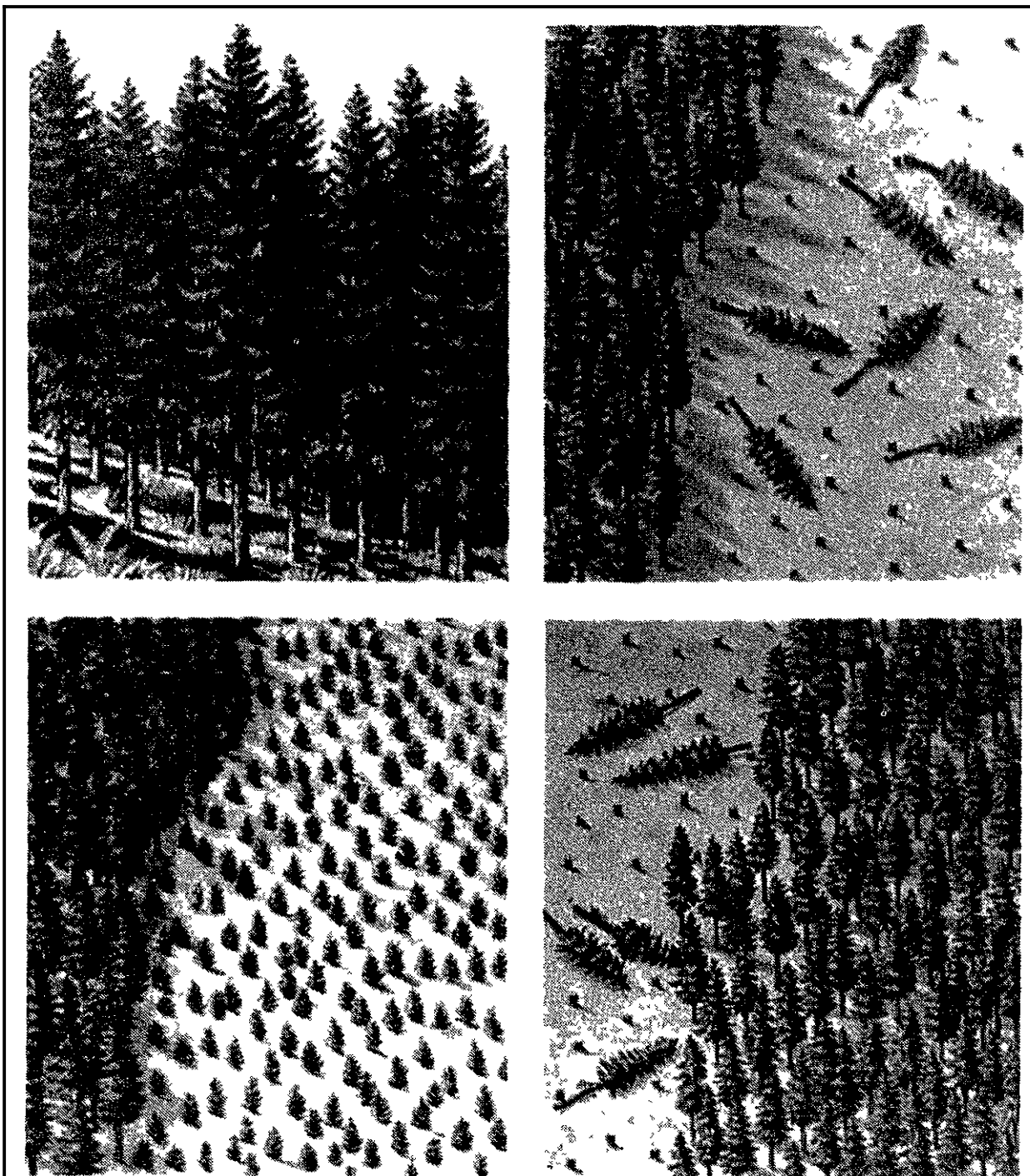
- **Variation** In tree age. A forest managed by even-aged silvicultural systems consists of a mosaic of even-aged stands. Every age class would be represented in a regulated forest, and each age class would be represented by approximately the same number of stands. A regulated forest managed by the group selection system would resemble forests managed by the even-aged silvicultural systems, except that the even-aged components (groups) would be much smaller and more numerous. In contrast, each stand in a regulated forest managed by the single-tree selection system would have trees of many ages (perhaps all ages).

The oldest (or largest) trees in any managed forest depend primarily on the management objectives, not on the silvicultural systems. In particular, the amounts of large- or old-growth to be produced or maintained depend more on the willingness to forego yields than on the kinds of silvicultural systems used to manage stands.

- **Variation** In developmental stages. In the even-aged and group selection systems, all stages of forest development are present in the forest, including grasses, forbs, shrubs, tree seedlings, and larger trees. Each stage is represented by entire stands or groups. In contrast, in the single-tree selection system the areas dominated by small plants such as grasses, forbs, or shrubs are commonly very small (for example, less than one-hundredth of an acre), but they typically occur somewhere in every stand. In a regulated forest, the total area occupied by each stage should be about the same, regardless of the silvicultural system.

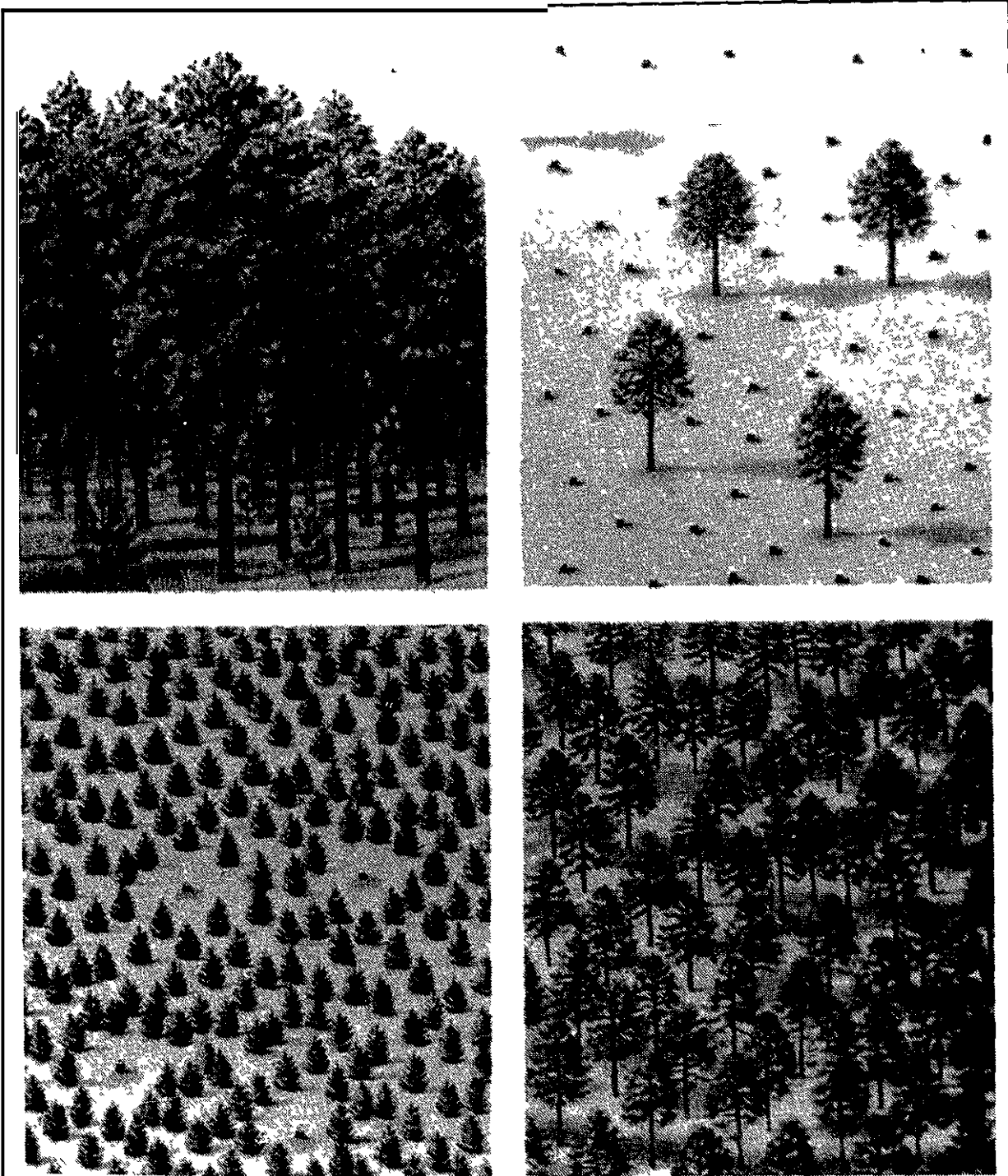
-- Occurrence of shade-tolerant and intolerant plants. Even-aged and group selection systems favor plants that can be readily established and grow well in full sunlight (shade-intolerant plants). These include grasses, most forbs and shrubs, and many of the most valuable commercial tree species, such as ponderosa pine and Douglas-fir. The single-tree selection system favors plants that can be readily established and grow well at low light levels (shade-tolerant plants). Examples in California forests are many ferns; some grasses, forbs, and shrubs; many non-commercial hardwood tree species; and a few commercial conifer tree species, such as white fir and incense-cedar.

Figure L.1: Clearcutting



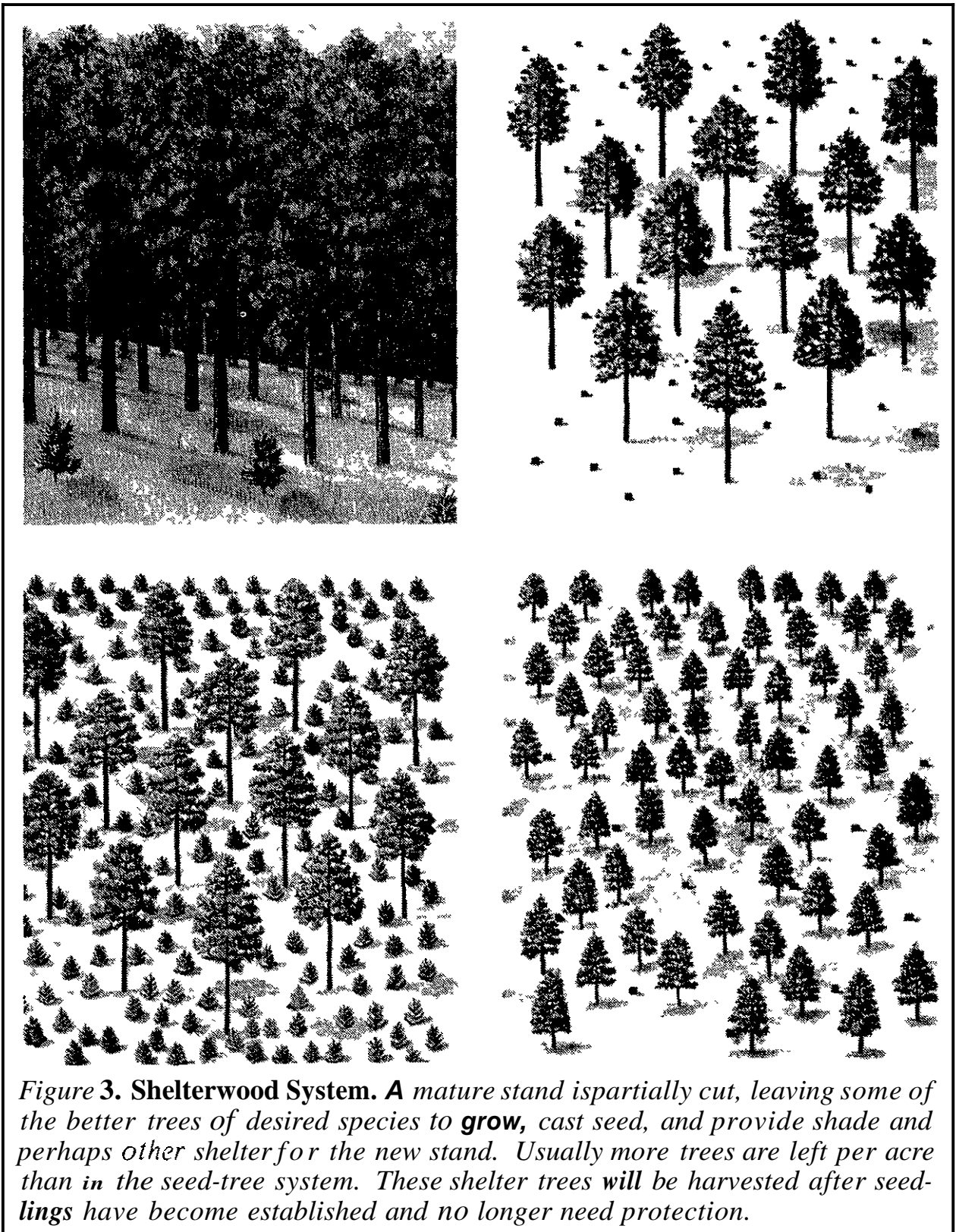
*Figure 1. Clearcutting. Part of a mature stand is cut, removing all trees. A new stand arises from seeds of surrounding trees or from sprouts sent up by roots or stumps. Seedlings may also be planted or seeds broadcast. When the new trees are well on their way in the unobstructed light of the clearing, a neighboring stand of mature trees is cut in turn. (The illustration is from *The Secret Life of the Forest* by Richard M. Ketchum, copyright 1970 by American Heritage Press, and is used with the permission of McGraw-Hill Book Company.)*

Figure L.2: Seed-tree System



*Figure 2. Seed-tree System. The mature stand is logged, but enough trees are left to reseed the area. The seed trees usually are large and valuable, and may be harvested when they have fulfilled their purpose. Like clearcutting, the system favors light-demanding species. (The illustration is from *The Secret Life of the Forest* by Richard M. Ketchum, copyright 1970 by American Heritage Press, and is used with the permission of McGraw-Hill Book Company.)*

Figure L.3: Shelterwood System



*Figure 3. Shelterwood System. A mature stand is partially cut, leaving some of the better trees of desired species to **grow**, cast seed, and provide shade and perhaps other shelter for the new stand. Usually more trees are left per acre than in the seed-tree system. These shelter trees will be harvested after seedlings have become established and no longer need protection.*

Figure L.4: Single-tree Selection System

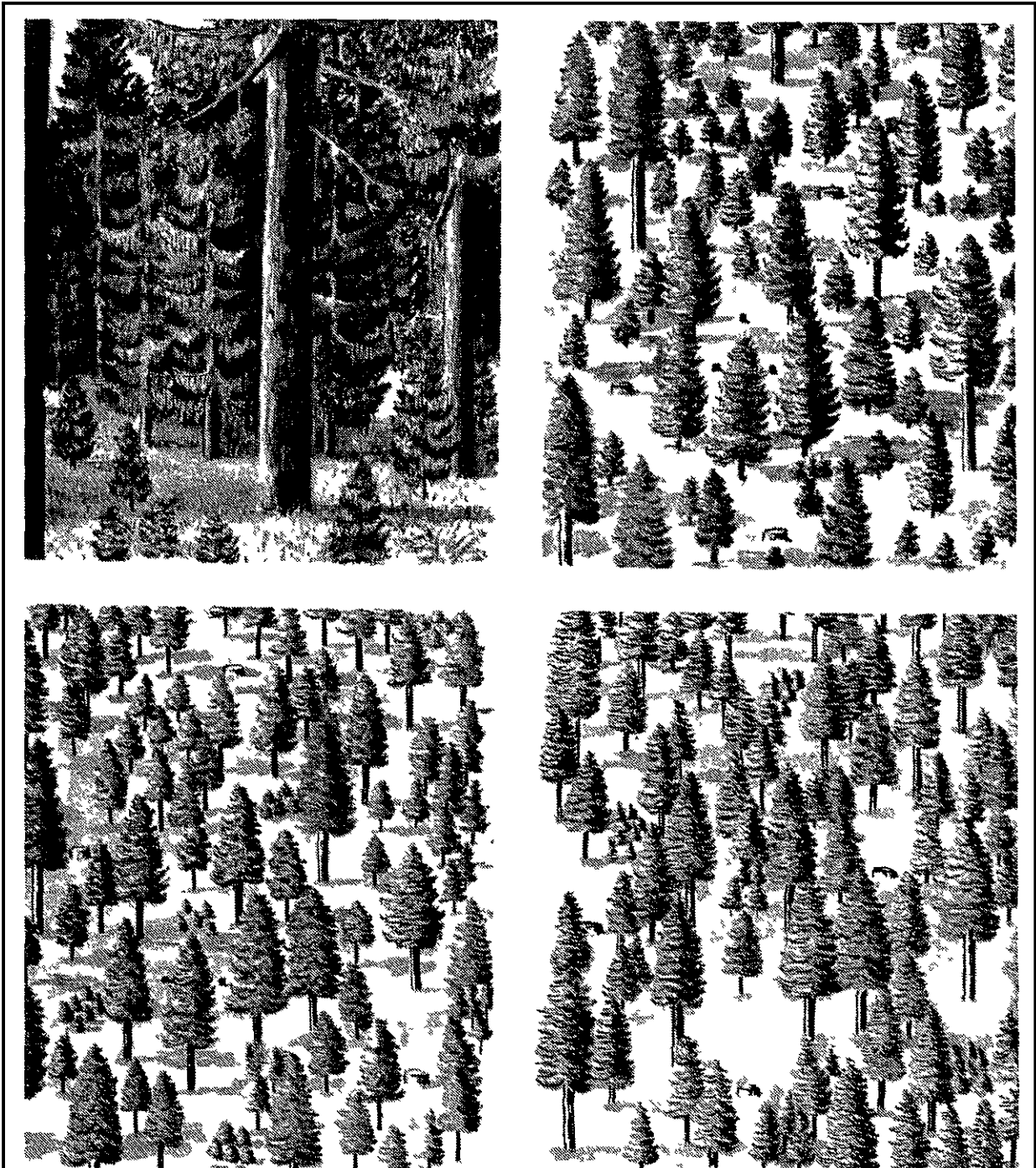


Figure 4. Single-tree Selection System. Cuts are made more often than in other systems, but since the entire stand is never removed, appearances are not much affected. Undesirable trees are removed, overly dense areas are thinned, and mature trees are harvested during each cut. Seedlings of shade-tolerant species develop wherever they can find room. The stand contains trees of many ages.

However, on low-quality forest lands where lack of available soil moisture or other soil conditions cause low plant densities, shading by trees is greatly reduced. There, shade-intolerant plants will persist if the single-tree selection system is used.

-- **Diversity of plant species** Species diversity depends on the biological and physical environments, on how the stands are managed under the different silvicultural systems, and evaluation standards of diversity

On moderate- to high-quality lands, stands managed by the single-tree selection system shift toward shade-tolerant species. In California, many stands and forests that were previously dominated by commercially more valuable pine and Douglas-fir now have large components of **less** valuable tanoak, madrone, or white fir. This process could reduce tree species diversity in such stands, compared with management by other silvicultural systems. The shift toward more shade-tolerant species also means that the species diversity of plants near the ground would eventually be lower in stands managed by the single-tree selection system.

The composition of commercial tree species may be significantly increased or decreased during stand regeneration, depending on the environmental conditions, availability of natural seed, selection of species to be planted, and the success of the plantings. If artificial regeneration fails in stands with mixed species, the diversity in the naturally-regenerated stand may be reduced significantly. Potential seed trees of some species could have been harvested, or only certain species (for example, white fir) could regenerate naturally under the brush that rapidly occupies newly harvested areas.

If both artificial and natural regeneration fail, the species diversity of commercial trees has been significantly reduced. The risk of a complete regeneration failure is least for the single-tree selection system. There is high probability **of** successful natural regeneration of all species where openings are small, seed sources are present, and ground environmental conditions are suitable for tree seedling establishment. The **risk** of **loss** of diversity in large openings can be reduced by planting all appropriate species, or by designating appropriate **seed** trees or **shelterwood** trees of mixed species.

--**Vertical diversity.** The vertical diversity in stands managed by the even-aged or group selection systems could be quite limited. Typically there is a single dominant layer of seedlings, saplings, or larger trees. However, usually there is considerable diversity in stands with larger trees because some trees are significantly taller and have fuller crowns than others. Full vertical diversity still occurs over the forest, but not in each stand or group. In contrast, the vertical diversity within each stand should be much greater in the single-tree selection system. Seedlings, saplings, and trees in larger tree classes should be seen from any point in the stand.

-- **Tree vigor.** If the stands are well managed, tree and stand vigor should be independent of silvicultural systems, with three exceptions. First, new seedlings in openings (particularly shade-tolerant species such as red fir and white fir) are heavily stressed by heat and lack of adequate water, until they develop good root systems. These stresses often cause heavy mortality (especially of natural seedlings, or of low-quality or mishandled or poorly planted seedlings from nurseries). Second, seedlings in openings are more susceptible **to** damage or mortality from frosts, particularly at high-elevation sites. Where seedling mortality (even of high-quality or properly handled and planted nursery seedlings) is expected to be excessive, **use** of the single-tree selection, shelterwood, and group selection (where groups are small) systems are favored. Third, maintaining good vigor of small shade-intolerant species, such as ponderosa pine, can be very difficult in stands managed by the single-tree selection system. To promote vigor and growth of these trees, tree density may have to be reduced, which can significantly reduce timber yields.

Many stands on National Forest lands are severely infected with certain root diseases or dwarf mistletoes. It is very difficult and costly **to** maintain or improve tree vigor and productivity if the single-tree selection system were used. These root diseases and dwarf mistletoes infect other trees more easily when this system is used.

Table 1: Ratings of the Major Silvicultural Systems by Principal **Biological** Attributes

	CLEARCUTTING	SHELTERWOOD	SEED TREE	GROUP SELECTION	SINGLE-TREE SELECTION
<p>○ is Good, Excellent, or Many ◐ is Moderate or Few ● is Poor or None</p>					
BIOLOGICAL ATTRIBUTE					
Appearance					
a Diversity of tree sizes in a stand					
(1) Vertical	●	●	●	◐	○
(2) Horizontal	●	●	●	◐	○
b. Number of openings in a forest ¹					
(1) Larger than 2 acres	○	○	○	◐	●
(2) 1/10th to 2 acres	●	●	●	○	●
(3) Smaller than 1/10th acre	●	●	●	●	○
c Potential for conserving or improving plant species diversity in a stand	○	○	○	○	◐ ³
Genetics					
a. Resistance to inbreeding effects	○	◐	◐	○	●
b Resistance to degradation by high-grading	○	○	◐	○	◐
c. Potential for conserving genes in a forest ²	○	○	○	○	○
Productivity (potential for producing biomass)	○	○	○	○	○

1 Exclusive of roads and natural openings such as meadows or rock outcrops

2 Assumes all harvested species are planted successfully, or will regenerate naturally, otherwise *Poor*.

3 Assumes no major fires; otherwise *Poor*

Genetic Resources.

-- **Conservation of genes.** Genetic diversity is basically unaffected when natural or artificial regeneration of commercial tree species is successful (Successful artificial regeneration means that appropriate procedures are used during seed collection to ensure a large genetic diversity in the collected seed) However, genetic diversity would be reduced if regeneration of a particular species were to fail repeatedly over broad areas.

-- **Quality of genes.** Where improperly applied, the single-tree selection system can lead to 'high-grading', which in turn reduces genetic quality for future wood production. High grading is the selective removal of the best trees (most rapidly growing, largest, and most valuable for wood), so that most regeneration comes from seed produced by the lower-quality, remaining trees.

The average genetic quality may be significantly lowered in a stand managed by the single-tree selection system because of higher rates of inbreeding. Some forest geneticists theorize that inbreeding would also increase under the shelterwood or seed-tree systems. Nearby trees of the same species usually are closely related, and they can pollinate each other. The natural seedlings should be even more inbred. In contrast, artificial regeneration or natural regeneration from edges of large openings reduces the probability of significant inbreeding. Large openings facilitate pollen movement from more distant, less closely related trees.

--**Productivity.** Scientific long-term comparisons of wood production using the different silvicultural systems have not been made anywhere in the world. This comparison will be possible many decades from now at Blodgett Forest, a University of California research facility. Theoretically, the total biological productivity (biomass) may be greatest for stands managed by the single-tree selection system. This is because of more continuous tree cover, compared to the other systems. However, merchantable stand growth and timber yields may not be higher for the single-tree selection system. Merchantable yields are strongly influenced by managerial factors.

MANAGERIAL CONTRASTS AMONG FORESTS AND STANDS MANAGED BY DIFFERENT SILVICULTURAL SYSTEMS (The major managerial contrasts described in this section are summarized in Table 2)

Public Concerns. In the last two decades the clearcutting system and to a lesser extent the shelterwood and seed-tree systems, have generated controversy in the United States and Europe

There are at least six major concerns in the Tahoe National Forest:

- (1) Clearcut areas are regarded as visually unattractive
- (2) The risks of significant soil erosion and loss of soil productivity are thought to be much greater for the clearcutting system.
- (3) Regeneration of clearcut stands is thought to be unreliable.
- (4) The risks of significant genetic losses are thought to be much greater for the clearcutting system because new stands may be monocultures
- (5) The use of chemical herbicides (strongly opposed by some groups and individuals) is thought to be much greater if even-aged systems are used, particularly the clearcutting system.
- (6) Artificial regeneration, particularly of even-aged stands, is thought to be too costly

All of these undesirable effects can occur under any silvicultural system. However, the risks of some are significantly different among certain systems. The concerns about genetic losses were addressed earlier in the sections on Diversity of plant species and Genetic Resources. The other five concerns are discussed in the following sections on Effects on Scenic Quality, Risks of Adverse Effects on Watersheds and Soils, Scientific Knowledge Base, Management Experience, Need for control of competing vegetation (Including the use of herbicides), and Treatment costs

Other managerial aspects of the silvicultural systems are also discussed in the sections below. They cover: risk of major wildfires; risk of damage by insect, disease, or wildlife pests, production of livestock forage; protection of archeological resources; administration of silvicultural projects; timber harvesting efficiency; genetic improvements in forests; and effects on fisheries and wildlife.

Effects on Scenic Quality. Uneven-aged silvicultural systems are usually better than even-aged systems for creating or maintaining natural-appearing landscapes. Uneven-aged systems apply treatments on a small scale. The treatments are also more selective and are well distributed in the forest. However, long-term maintenance of natural-appearing landscapes could be more difficult under the uneven-aged systems because natural wildfires are more difficult to control. (See the section on Risk of Major Wildfires.)

Where timber management activities are not permitted to be visually evident, the single-tree selection system may be the only feasible alternative. All silvicultural systems may be feasible where the management objective is to maintain the desired landscape character, depending on the circumstances. However, the uneven-aged systems would generally be better than the even-aged systems. All silvicultural systems may also be feasible where timber management objectives are dominant over visual quality objectives. Similarly, if the landscape character needs to be improved, any silvicultural system could be appropriate. For example, small or large temporary openings that blend with the topography, which are created by group selection or clearcutting regeneration cuttings, can help to achieve a pleasing landscape.

Risks of Adverse Effects on Watersheds and Soils These risks depend more on the characteristics of the watershed and soils, and on the care and quality of forest practices, than on the kind of silvicultural system used. Adverse effects associated with any silvicultural treatment can usually be avoided or mitigated. The major possible adverse effects are erosion, sedimentation in waterways, soil compaction, and loss of soil productivity through soil or nutrient loss.

The risks of significant, cumulative erosion and sedimentation effects in watersheds usually depend more on road design and location than on silvicultural treatments.

The risk of significant erosion within stands depends on how much protective vegetation and litter cover is removed, as well as on road design and location. This risk is generally higher for the clearcutting system because more cover is temporarily removed by clearcutting and preparation for seedling establishment. The risk is least for the single-tree selection system.

Extensive and frequent use of heavy machines can cause significant soil compaction of some soils. The risk of this occurring should not be different among the silvicultural systems.

The risk of soil nutrient losses is increased where vegetation or litter is cleared or high-intensity fires occur. Again, the risk due to clearing vegetation or litter is greater for the even-aged silvicultural systems. High-intensity fires may occur in any stand if controlled fires are used improperly. However, the risk of high-intensity fires is greater for the single-tree selection system because crown wildfires are more likely. (See the section on Risk of Major Wildfires.)

Scientific Knowledge Base. Knowledge is least for the single-tree selection system for National Forest lands in California.

-- Biological. Considerable research has been completed on the biological foundations for all of the silvicultural systems. Planting, natural regeneration, and genetic principles have been extensively studied for all systems. Research is more complete on early growth of young potential crop trees and control of competing plants for the even-aged and group Selection systems. Similarly, stand growth model research is more complete for the even-aged and group selection systems. There are no major differences in the knowledge base about intermediate cuttings or about insect and disease pest management among the silvicultural systems.

Table 2: Ratings of the Major Silvicultural Systems by Key Managerial Attributes

MANAGERIAL ATTRIBUTE	CLEARCUTTING	SHELTERWOOD	SEED TREES	GROUP SELECTION	SINGLE-TREE SELECTION
	<p>○ is Good, Excellent, or Many</p> <p>◐ is Moderate or Few</p> <p>● is Poor or None</p>				
Overall Public Acceptance	◐	◐	◐	◐	○
Natural Appearance	●	◐	◐	◐	○
Soil Protection in Stands					
Soil stability where soils have high erosion problems	◐	◐	◐	●	○
Scientific Knowledge Base and Management Experience	○	◐	◐	◐	◐
Wood Production					
a. Cost efficiency of treatments'					
(1) General (based on treatment size unit)	○	○	○	●	●
(2) Regeneration	◐	◐	◐	◐	◐
(3) Feasibility of aerial application of herbicides	○	○	○	○	●
(4) Harvesting	○	◐	◐	◐	●
b. Potential for regulating the forest, while maintaining harvest levels	○	◐	○	●	●
c. Administrative efficiency (planning, contracting, and record keeping)	○	◐	◐	●	●
d. Need for control of competing vegetation	○	○	○	○	○
e. Potential for retaining vigor and value of residual trees	○	○	○	◐	◐
f. Potential for genetic improvement of trees by planting	○	○	○	◐	◐

Table 2 Ratings of the Major **Silvicultural** Systems by Key **Managerial** Attributes (Continued)

MANAGERIAL ATTRIBUTE				CLEARCUTTING	SHELTERWOOD	SEED TREE	GROUP SELECTION	SINGLE-TREE SELECTION
	Controlling Wildfires in a Forest							
a. Potential for controlling major wildfires				○	○	○	○ ²	● ³
b. Potential for using controlled fires to manage fuels				○	○	○	◐ ²	● ³
Risk of Significant Pest Damage								
Potential for controlling damage from dwarf mistletoes and certain tree root diseases				○	○	○	○ ²	●
Livestock Production Potential in a Forest				○	○	○	◐ ²	○
Streamside Management Zones								
Potential for protecting fish habitat				●	◐	●	◐	○
Wildlife Habitat in a Forest								
a. Potential for deer, rabbits, and quail				○	○	○	○	● ³
b. Potential for spotted owls and tree squirrels				◐	◐	◐	○	○
c. Potential for soaring hawks and eagles				○	○	○	◐ ²	● ³

1 Assumes gentle slopes; otherwise Moderate, but Poor for the Group and Single-Tree selection systems.

2 Assumes openings of about 1-2 acres; Poor if smaller

3 Assumes highly productive land: otherwise Moderate or Good

-- Managerial aspects. Research on the managerial aspects of California's forests has focused on the even-aged and group selection systems. Only in the last decade have concerted efforts been made to research the long-term practicality of the single-tree selection system. Earlier studies were not completed because of difficulties with controlling regeneration of some desired species, controlling stocking, or sustaining the desired stand structures and merchantable yields. This resulted in strong recommendations against the system by many forest research scientists. New interest has been generated by demands for continuous forest cover, maintenance of an unmanaged appearance, and for an alternative to management by the even-aged systems. However, several decades of management will be required before analyses of overall effectiveness can be made.

Research in the group selection system is also underway in California. It too will require several decades of treatments to achieve regulated stands.

Management experience. Timber harvesting has occurred in California for over 140 years. However, experience with managing forests with the goal of regulating potential yields has been limited to the last several decades. Regulation of National Forest lands has only involved the even-aged silvicultural systems, particularly clearcutting. However, extensive experience has been gained with all of the silvicultural systems in managing certain stands.

-- Single-tree selection. Most of the harvesting from National Forest and many private timber lands in California has been selection cuttings of large trees. These cuttings were typically made with no long-term plan for managing the stands by the single-tree selection system. This system can require cutting trees in all size classes during each operation. Regeneration from natural seeding was usually counted on. Also, growth of the young trees and the uncut smaller merchantable trees was counted on to offset the reduction in the forest inventory due to harvesting the largest trees. Unfortunately, repeated harvests of the largest trees have often caused undesirable results: understocked residual stands with lower quality, lower value trees. These stands will have to be regenerated using one of the even-aged silvicultural systems or the group selection system to reestablish full stocking of desired species.

-- Group selection. The group selection system was tried extensively on National Forest land in the Region about 20 years ago. Small openings were made to encourage natural regeneration, particularly of sugar and ponderosa pines. Special cutting guidelines were developed for different kinds of naturally-occurring groups of trees. The system, called Unit Area Control, failed for three reasons. First, the many small groups of natural regeneration could not be managed efficiently. They could not be monitored. Needed subsequent treatments were not made. The young trees did not grow well or died. Some groups could not be treated because of the higher costs of treating small areas. Second, the cutting guidelines could not be used consistently. There was great difficulty in determining which kinds of groups were actually present in the stand, and the location of their boundaries. Third, many of the small groups were unavoidably destroyed in later harvesting projects when large trees in adjacent groups were felled, or when logs were moved out of the stand. It is particularly difficult and costly to save small groups of trees on steep slopes from excessive damage during harvesting or preparation of the site for successful establishment of tree seedlings.

-- Even-aged systems. The oldest plantations on National Forest System lands in the Region are about 60 years old. Some are soon to be harvested and replaced, thus completing the cycle of an even-aged silvicultural system. Extensive experience has been gained in the regeneration, promotion of young tree growth, intermediate cutting, and regeneration cutting treatments for even-aged systems in all major timber types in the Region. Overall, artificial regeneration following clearcutting has been very reliable in ponderosa pine, Douglas-fir, and mixed conifer stands. Artificial regeneration has been significantly less reliable in red or white fir stands. The primary causes of planting failures are (1) difficulties with consistently producing high-quality seedlings in the nurseries and (2) planting when the environmental conditions are inappropriate.

The shelterwood system with natural or artificial regeneration is presently used in red or white fir stands where regeneration after clearcutting is expected to be unreliable.

Wood Production

-- Need for control of **competing** Vegetation (Including the use of herbicides). Control of competing vegetation is needed in all of the silvicultural systems to ensure establishment and good growth of tree

seedlings or sprouts. Some have theorized that less control is needed in the single-tree selection system. Under this system tree cover is more continuous, resulting in fewer competing grasses, forbs, and shrubs. However, these competitors cause significant moisture stress in the potential seedling and sapling crop trees (in addition to the substantial moisture stress caused by the larger trees), thereby reducing their survival and growth. There is no compelling theoretical basis for concluding that the need for control of competing vegetation should be reduced if the single-tree selection system were used. Certain commonly-occurring, major competing plants can retain good vigor when shaded by most conifers (such as manzanita, bear clover, tanoak, or madrone). Using the single-tree selection system would definitely not reduce the need for controlling competition from such plants.

Frequency of control treatments varies by silvicultural system. Treatments under the single-tree selection system could be needed somewhere in every stand as often as every 5 to 10 years. The average treatment frequencies in the other systems are much lower. For example, in any of the even-aged systems, up to about three treatments could be needed in the first ten years of a new stand. No additional treatments may be needed until the stand is regenerated -- a period that should exceed 50 years. Thus, the average period between treatments would be greater than 20 years. Regardless of the silvicultural system used, the total acres treated (and the total pounds of herbicide applied per acre, if herbicides were used) should be about the same over the long term.

The aerial application of herbicides (usually the most cost-effective, and frequently the most controversial, method of applying herbicides) could not be used in the single-tree selection system. Depending on topography and vegetation structure, it could also be impractical in the group selection system.

-- Treatment costs. The size of a treatment area is a major factor in determining treatment costs and managerial feasibility. Generally, costs per acre in intensively managed forests are higher when the treatment units are smaller. Therefore, the even-aged systems are the most cost-efficient, and the group selection and the single-tree selection system (in that order) are the least cost-efficient.

Regeneration by clearcutting is the most cost-efficient even-aged system. Shelterwood and seed-tree systems are less so, in decreasing order. The removal of shelterwood trees or seed trees, after the seedlings are established, is a second cost not required in the clearcutting system.

In theory, the total cost of natural regeneration should be less than for artificial regeneration. The costs of seed collection, nursery operations, seedling handling, and planting are eliminated. However, these savings are often offset by increases in pre-commercial thinning costs. Natural regeneration often results in much greater densities of trees than would be planted, or are desirable. Also, unreliable seed production by many commercial tree species often delays natural regeneration. This reduces wood productivity. When natural regeneration is delayed, the sites are occupied by competing plants, the control of which can be costly. Overall, artificial regeneration insures prompt reforestation of preferred species at desirable densities. If natural regeneration is used, the shelterwood and seed-tree systems are usually more cost-efficient than the uneven-aged systems. The reason is the economies of scale associated with larger treatment areas. Where artificial regeneration is used, the clearcutting and shelterwood systems are more cost-efficient, for the same reason.

- Achieving regulated forests, while maintaining Forest timber harvest levels. Regulation can be accomplished most easily with the even-aged or group selection silvicultural systems. There are two critical disadvantages of the single-tree selection system. First, foresters lack the detailed information about individual trees needing cutting on a stand-by-stand basis. There are tens of thousands of stands on a typical National Forest in California, with up to about ten thousand potential crop trees per stand. Currently, inventory data needed for the single-tree selection system are lacking for about two-thirds of these stands. Second, in the Mediterranean climate in California, large forest wildfires are inevitable. Reforestation after these fires creates many, new, even-aged stands. It is very difficult to regulate a forest under a single-tree selection system when substantial acreages of unplanned even-aged stands occur.

-- Planning, contracting, and record keeping. The many small units used in the uneven-aged systems makes for ineffective and costly operation and administration. If stands in a typical Ranger District were managed by uneven-aged systems, in excess of 50,000 separate areas would have to be inventoried, planned for, treated, and monitored. Even with computers the management complexity would be excessive.

Therefore, the extent to which uneven-aged management systems are used for intensive timber management will necessarily be very limited.

-- Timber harvesting. Five important aspects of timber harvesting are strongly influenced by the choice of a silvicultural system: (1) variability in sizes of harvested trees, (2) area to be harvested, (3) complexity of the harvesting treatments, (4) the probability of causing significant damage to trees to be left in the stand or adjoining stands, and (5) the probability of causing long-term root disease problems. The first three influence harvesting efficiencies, and the last two affect the vigor, tree stocking, and value of the residual stand.

There is wide size variation in trees harvested in each operation under the single-tree selection system. This reduces harvesting efficiency because logging equipment is size-dependent. However, this disadvantage could be insignificant in young-growth stands.

Harvesting in the single-tree selection system is much less efficient than for the other systems because more land must be treated in each operation to harvest the desired yield from the forest.

The complexity of harvesting treatments is also greatest in the single-tree selection system. Identifying which trees to cut, determining where they are to be felled, felling the trees in the designated areas, and removing the trees or logs out of the stand without damaging the residual trees can be very difficult and costly. In the single-tree selection system, cuttings occur as frequently as every five to ten years. In the other systems, only the intermediate cuttings are as complex. The regeneration cuttings in the other systems are more straightforward operations. Group selection and clearcutting are the most efficient.

Logging damage to trees left to grow in the stand is typically greatest for the single-tree selection system. It is very difficult to selectively harvest trees in dense stands without damaging many residual trees, particularly on steep slopes. Damaged trees are often infected by wood-decaying fungi that can persist in the soil for long periods, thus retaining the ability to infect new trees. The fungi reduce the windfirmness, vigor, commercial value, and stocking of residual trees. This characteristic is a particular concern in developed recreation areas where selection systems are often applied. Stands with red or white fir have an especially high probability of being infected with wood-decaying fungi when damaged.

-- Genetic Improvements in Forests. Genetic improvements to increase timber growth, improve tree form and wood quality, or increase resistance to disease and insect pests, depend primarily on planting trees with desirable genetic characteristics. Therefore, the potential for genetic improvement is greater for silvicultural systems that use artificial regeneration. The clearcutting, group selection, and shelterwood systems (if artificial regeneration is used) have the greatest potential for improving the genetic quality of forest trees. The single-tree selection system, with its natural regeneration and higher rates of inbreeding, has the least potential.

Risk of Major Wildfires. The even-aged systems (clearcutting in particular) are best for reducing the risk of major wildfires because the greater control of fuel distribution makes wildfire prevention and suppression easier and less costly. The single-tree selection system is least desirable because fires burn intensely and are more difficult to control. Openings that serve as fuel breaks occur less frequently in forests or stands managed by this system. Also, the multiple tree layers create fuel 'ladders', permitting ground fires to spread into the crowns of the large trees. Crown fires are more destructive and more difficult to control than ground fires. Finally, the use of prescribed fires to reduce the risks of large wildfires is most difficult and costly in the single-tree selection system.

Risk of **Significant** Pest Damage. Silvicultural treatments reduce risks by selecting appropriate tree species, by diversifying within and among stands, and by maintaining tree vigor. Diversification within stands is increased through use of multiple species or uneven-aged silvicultural systems. Vigor is promoted by preventing the trees and other plants from becoming too dense. Competing plants also provide habitat for animal pests such as pocket gophers and rabbits. Well-managed stands in all systems reduce the risk of significant pest damage. However, there are significant exceptions.

Risk of significant insect or disease damage to trees increases if the trees have been wounded. Many wounds occur during silvicultural treatments. Accidental scarring of trees can be caused by felling nearby

trees, or by bumping them with machines or logs moving through the forest. Risk increases with the frequency of stand treatments, particularly cutting. Cutting frequency is much higher for the single-tree selection system than for others, so the risk of significant insect and disease damage is highest.

Two serious diseases, dwarf mistletoes and some root rots, can be difficult, costly, and in some cases, impossible to control under selection systems. Damage from these diseases is most easily controlled by managing stands as wholes. Dwarf mistletoe plants can project seeds down on trees within about 100 feet horizontally, thereby infecting nearby susceptible species. Even-aged systems allow the manager to control damage from this pest through cutting treatments.

Many root disease fungi infect susceptible trees by root-to-root contact. Some root diseases start at time of harvest and spread to other trees in the stand. Control may require killing trees in a zone around the infected area. Uneven-aged management, particularly the single-tree selection system, can perpetuate root disease "centers" and spread infection.

Generalizations about wildlife pest damage and silvicultural systems are difficult. The major potential wildlife pests in the Region include pocket gophers, deer, porcupines, and rabbits. These animals feed in vegetation dominated by grasses, forbs, shrubs, or tree seedlings. Use of the even-aged or group selection systems can create large areas temporarily dominated by this kind of vegetation. This can cause higher densities of potential pests, which increases the risk of significant damage to potential crop trees. However, often the actual damage levels are not increased where this occurs.

Production of Livestock Forage and Browse. Even-aged systems and the group selection system are best for livestock production. Grasses, forbs, and shrubs used by livestock occur in the greatest quantity in openings. Management efficiency increases in large forage areas because livestock control and access is easier and less costly.

Protection of Archeological Resources. There should be no significant differences among the silvicultural systems in their risk of damage to undetected archeological resources. Damage depends more on the intensity and frequency of management treatments than on the kind of silvicultural system, particularly when large machines are used.

Effects on Fisheries and Wildlife Habitat. Fisheries habitat is most easily protected where the water quality is high, stream temperatures are kept moderate through shading, and where the runoff quantity is sufficient to maintain spawning areas. The single-tree selection or group selection systems are usually more advantageous than the even-aged systems for managing the vegetation in streamside management zones and riparian areas. However, the silvicultural systems used outside these zones does influence the amount of sediment in the water. (See the discussion in the section titled **Risks** of Adverse Effects on Watersheds and **Soils**.)

The choice of silvicultural systems to best manage wildlife habitat depends on which species are to be emphasized. Regardless of which treatment is used in a stand, some species will benefit and others will not. Most wildlife species are adapted to thrive in *specific* structures and species of forest vegetation. For example, the use of the even-aged or group selection systems favors deer, quail, and rabbits that use herbaceous and shrubby vegetation most abundant in large openings in the forest. The single-tree selection system may favor animals that need vertical diversity, such as spotted owls and tree squirrels.

Almost all forest wildlife species could use a particular young-growth stand at some time in **its** development, regardless of the silvicultural system. (The exceptions are the few species that may be totally dependent on very large, decadent trees for habitat.) The kind of system would influence the proportions of species and when and how they could use the stand as habitat. A significant exception is single-tree selection management applied to large areas. The absence of large openings could prevent use by wildlife adapted to this kind of habitat, such as soaring hawks. Overall, a mix of the silvicultural systems in the forest would probably best achieve most wildlife management objectives.

BIBLIOGRAPHY

Burns, **Russell M.** (Tech. Compiler) **1983**. Silvicultural Systems for the Major Forest Types of the United States, Revised, Dec. **1983**. USDA Forest Service Agriculture Handbook No. **445**, **191** pp

Daniel, Theodore W , Helms, John A. and Frederick S. Baker **1979**. Principles of Silviculture, Second Ed. McGraw-Hill, 500 pp.

Helms, John A **1980**. The Callfomia region. In Regional Silviculture of the United States, Second Ed. (Barrett, John W. ed.). John Wiley & Sons, pp **391-446**

Gordon, Donald T. **1983**. Even-aged vs. uneven-aged management in eastside pine. In Mangement of the eastside pine type in northeastern Callfornia - Proc. of a symposium, June **15-17, 1982**, Lassen College Forest Resource Center, Susanville, Calif. (Robson, Thomas F. and Richard B. Standiford, eds). Northern Calif. Society of American Foresters, SAF **83-06**, pp 54-58.

Scott, David R. M. **1980**. The Pacific Northwest region In Regional Silviculture of the United States, Second Ed. (Barrett, John W. ed). John Wiley & Sons, pp **447-493**.

Society of American Foresters. **1981**. Choices in Silviculture for American Forests. Society of Amer. Foresters, Wash, D. C., 80 pp.

Smith, David M. **1962** The Practice of Silviculture, Seventh Ed. John Wiley & Sons, 578 pp.

USDA Forest Service. **1978**. Uneven-aged Silviculture and Management in the United States. Combined Proc. of two In-Service workshops held in Morgantown, West Virginia, July **15-17, 1975**, and in Redding Callfornia, October **19-21, 1976**. Timber Management Research, Forest Service, Washington D C , **234** pp.

USDA Forest Service. **1980**. National Forest Landscape Management, Vol **2**, Chapter 5, Timber. Agriculture Handbook No **559,223** pp.

USDA Forest Service. **1985**. National Forest Landscape Management, Vol. **2**, Chapter **6**, Fire Agriculture Handbook No. 608, **89** pp.

USDA Forest Service, Pacific Southwest Region **1983**. Draft Environmental Impact Statement, Vegetation Management for Reforestation. **340** pp.

APPENDIX M

BACKGROUND TO THE HERBICIDE POLICY ANALYSIS

In late 1988 pending outcome of the Region 5 FEIS for Vegetation Management for Reforestation, alternatives for the management of the Tahoe National Forest (TNF) were analyzed under four different policy options for herbicide use

1. Recommended (essentially all vegetation management tools available).
2. No aerial application of herbicides.
3. No herbicides used, but unlimited budget for other methods
4. No herbicides used, but budget constrained to level of 'Recommended.'

TNF data, used for the R5 FEIS for Vegetation Management for Reforestation, was reviewed, updated, and further customized for this analysis. The information was run through a Regional computer program and the tabular summary results are presented in Table 2.4 in the EIS. The purpose of this appendix is to provide more detailed information about the analysis. The complete analysis is part of the planning records and is available for review in the Supervisor's Office in Nevada City, California.

The analysis was done with a specialized program and was not run through the FORPIAN model (see Appendix B). There are some differences in values generated by FORPIAN and, therefore, the tables should be used for comparative relationships only.

TREATMENT COSTS

Costs of treatments were reviewed and changed as necessary to reflect recent TNF figures. The base year used was 1987 for all treatments except herbicide application. Herbicide costs were derived from 1983 data adjusted to a 1986 base year. Costs are on a per-acre basis.

Broadcast burn	\$300	Plant	\$225
Tractor pile	\$200	Precommercial thin	\$150
Cover piles & burn	\$100	Grazing	\$10
Jackpot burn	\$200	Handpile-steep slopes	\$400
Mastication	\$180	Handpile-gentle slopes	\$290
Feller-buncher	\$200	Hand grub	\$300
Disk/till	\$150	Hand cut	\$280
Terrace	\$195	Hand cut & daub	\$330
Collars/mulches	\$190	Aerial spray	\$75
Tractor spray	\$70	Hand spray	\$140

GROWTH AND YIELD ASSUMPTIONS

Projected yields (mean annual increment) by forest type and site were customized based on actual figures from the TNF inventory and yield tables. TNF yields for mixed conifer were slightly lower than the Regional average and slightly higher for eastside pine and red fir. Site classes were dropped one class for slopes greater than 60 percent.

Mixed conifer, 90-year rotation, Dunning site 2, MAI 510 board feet/acre/year

Red fir, 95-year rotation, Dunning site 3, MAI 570 board feet/acre/year

Eastside pine, 110-year rotation, Dunning site 4, MAI 200 board feet/acre/year

LANDBASE

Acreage by slope class and vegetation type by forest type was adjusted to approximate the total intensively managed landbase of the Preferred alternative in the Forest Plan FEIS (Alternative PRF) Projection of effects of various herbicide policy scenarios was made by applying the same percentage changes shown in Table 2 4 for Alternative PRF to the other alternatives. A projection was not made for the Nonmarket alternative (Alternative NMK) because that alternative assumed no herbicide use and was so modeled in FORPLAN.

ESTIMATED ACRES BY SLOPE CLASS AND VEGETATION TYPE FOR TAHOE NF FOREST TYPES
[PREFERRED ALTERNATIVE INTENSIVELY MANAGED LANDS]

VEGETATION TYPE	TRACTOR GROUND	CABLE <60%	CABLE >60%
Sprouting manzanita	22,200	26,600	17,800
Non-sprouting manzanita	6,700	8,900	6,700
Bear clover *	13,300	17,800	13,300
Other brush	22,200	26,600	17,800
Grass/forbs	6,700	8,900	6,700

VEGETATION TYPE	TRACTOR GROUND	CABLE <60%	CABLE >60%
Other brush	11,300	14,000	Negligible
Grass/forbs	7,700	9,500	Negligible

VEGETATION TYPE	TRACTOR GROUND	CABLE <60%	CABLE >60%
Sprouting manzanita	10,400	5,600	Negligible
Other brush	20,700	11,200	Negligible
Grass/forbs	20,000	12,000	Negligible

analysis purposes only. They are not policy direction for how the actual site-specific prescriptions are to be developed.

The typical prescriptions are summarized by vegetation type and presented below.

SITE PREPARATION

Tractor ground

Recommended program

- **80%** tractor pile & burn, 20% plant through slash
- herbicides used on bear clover and grass/forb types

No aerial herbicide application

- same as recommended, except no aerial application

No herbicides

- 70% of bear clover unsuitable for TM (cannot reliably regenerate within 5 years), remainder to be terraced; site prep as above supplemented by grubbing, collars/mulches & disking, rather than herbicides

Cable ground <60% slope

Recommended program

- 70% broadcast burn, 30% plant through slash
- herbicides used on bear clover and grass/forb types

No aerial herbicide application

- same as recommended except no aerial application

No herbicides

- All bear clover unsuitable; site prep same as recommended, supplemented by grubbing and collars rather than herbicides

Cable ground >60% slope

Recommended program

- 70% broadcast burn, 30% plant through slash
- aerial herbicides used on bear clover and grass/forb types

No aerial herbicide application

- Bear clover unsuitable for TM, some acres of other types go to non-intensive mgmt; site prep same as recommended, but supplemented by grubbing and collars, rather than herbicides

No herbicides

- same as 'no aerial herbicides'

RELEASE

Tractor ground

Recommended program

- **90%** herbicide application (**40%** tractor, 30% hand, 20% aerial), **5%** mastication, **5%** grubbing

No aerial herbicide application

- **90%** herbicides (**50%** tractor, 40% hand), **5%** mastication, 5% grubbing

No herbicides

- **50%** mastication, **10%** grubbing, 10% livestock, 10% tractor pile, 10% collars, 10% none [70% bear clover unsuitable for TM]

Cable ground <60% slope

Recommended program

- **90%** herbicide application (**50%** aerial, 40% hand), 10% grubbing

No aerial herbicide application

- same as recommended except no aerial application

No herbicides

- All bear clover unsuitable for TM; **85%** grubbing, **5%** livestock, 10% collars/mulches

Cable ground >60% slope

Recommended program

- 70% broadcast burn, 30% plant through slash
- aerial herbicides used on bear clover and grass/forb types

No aerial herbicide application

- Bear clover unsuitable for TM, some acres of other types to nonintensive mgmt, **95%** grubbing, 5% livestock

- No herbicides
- same as 'no aerial herbicides'

PRECOMMERCIAL THINNING

Tractor ground

- Recommended program
- 70% hand felling, 20% feller/buncher, 10% mastication
- No aerial herbicide application
- same as recommended
- No herbicides
- 70% of bear clover unsuitable; otherwise, same as recommended

Cable ground <60% slope

- Recommended program
- hand felling
- No aerial herbicide application
- same as recommended
- No herbicides
- All bear clover unsuitable; otherwise, same as recommended

Cable ground >60% slope

- Recommended program
- hand felling
- No aerial herbicide application
- All bear clover unsuitable, otherwise, same as recommended
- No herbicides
- All bear clover unsuitable. otherwise same as recommended

BUDGET LIMITATION

For the herbicide policy alternative of 'no herbicides, constrained budget,' some of the least efficient acres would drop out of the landbase to meet the budget limit:

- Eastside pine, cable ground, sprouting manzanita
- Mixed conifer, cable >60%, non-sprouting manzanita
- Eastside pine, tractor ground, non-sprouting manzanita
- Eastside pine, cable, grass/forb
- Mixed conifer, cable >60%, sprouting manzanita
- Mixed conifer, cable <60%, non-sprouting manzanita [some]

APPENDIX N

THE REGIONAL TIMBER SUPPLY-DEMAND SITUATION IN CALIFORNIA

INTRODUCTION

This appendix was created to address public comment that requested additional information on the broad level timber supply and demand situation in relation to supplies from individual National Forests. Existing information from recent RPA assessments, the Pacific Southwest Regional Guide, Forest Service research publications, and the State of California's Forest and Range Resource Assessment Program was used for this purpose.

I. Historical Harvests from Public and Private Lands - Statewide

Timber harvest in California has been in a downward trend for over 30 years. In 1955, timber harvest in the State from all lands totaled 6 billion board feet. In that year, harvest from private lands was 4.9 billion, and harvest from National Forest was 1.0 billion. Less than 100 million board feet were harvested from other public lands. Since that time, total harvest in the State has fallen steadily. By 1982, at the bottom of the last recession, harvests had fallen to 2.5 billion board feet. Since then, annual harvests have rebounded to 4 billion board feet. Harvest from private lands fell to 1.5 billion board feet in 1982 and have since rebounded to 2.2 billion board feet. Harvest from National Forests increased to a peak of 2.36 billion board feet in 1968. National Forest harvests then trended downward to a low of 0.9 billion board feet at the bottom of the last recession and have since rebounded to 1.96 billion board feet. Harvests from other public lands have been relatively stable at near 100 million board feet for the last three decades. (See Table N.1.)

As shown in Table N.1, harvest levels fluctuate widely from year to year rather than following a smooth pattern. The long-term harvest trend is influenced primarily by timber inventory and growth levels, while year-to-year variations are influenced primarily by changes in housing markets and general business conditions.

II. Statewide Demand for Timber Products and the Relationship to Harvest Levels

With a population that has grown faster than the National average to over 26 million people and a high level of income per capita, California is one of the largest markets for lumber, wood, and paper products in the world. When discussing the relationship between the demand for timber products and the demand for timber harvest (stumpage), it is necessary to translate the demand for timber products into its raw timber equivalent. Expressed in these terms, the demand for timber has been increasing, but at a slower rate than the growth in population. While the population has been growing, per capita consumption of raw timber has been declining. This has occurred due to the introduction of labor and material saving technologies in both timber product manufacturing and in industries that use manufactured timber products. Some examples in timber product manufacturing include the use of thinner saws and computerized controls to reduce the amount of sawdust and trimmings during lumber manufacturing, the increased use of reconstituted board products (particleboard, flakeboard, waferboard, etc.) to make use of raw material that was previously underutilized, and the use of computerized controls and improved chemical processes to improve product yields in paper manufacturing. Some examples in industries that use timber products include increased use of concrete slabs in housing construction, use of gypsum board and similar products instead of wooden lath in wall construction, increased use of synthetic materials for roofing and walls, and increased use of built-up 2x4 trusses and similar products instead of larger solid wood members. The result of these technological innovations has been a drop in per capita consumption of raw timber from 390 board feet annually in 1950 to 360 board feet annually in 1983. Because population in the State grew from 10.6 million in 1950 to over 26 million at present,

total demand increased from 4.1 billion board feet annually in 1950 to 9.3 billion board feet annually at present.

While the demand for timber products (measured in raw material equivalents) has been increasing, timber harvests in the State have been decreasing. The difference between the growing demand and the declining supply has been made up by increased imports to the State, primarily from Oregon, Washington, and Canada. The State has changed from a net exporter to a net importer of timber products over the last three decades.

Table N.1. - California Timber Harvests by Ownership, 1952-86

Year	Private	Other Public billion board ft.	National Forest billion board ft.	Total billion board feet
1952	4.40	.05	.61	5.06
1953	5.32	.04	.63	5.99
1954	4.79	.05	.76	5.60
1955	4.93	.06	1.03	6.02
1956	4.69	.08	1.09	5.86
1957	4.36	.07	.92	5.35
1958	4.47	.09	1.11	5.67
1959	4.29	.12	1.48	5.89
1960	3.70	.11	1.33	5.14
1961	3.85	.11	1.38	5.34
1962	4.05	.11	1.38	5.54
1963	3.69	.11	1.66	5.46
1964	3.50	.11	1.86	5.47
1965	3.21	.14	1.92	5.27
1966	2.97	.11	1.93	5.01
1967	3.06	.11	1.89	5.06
1968	2.82	.16	2.36	5.34
1969	2.88	.12	2.00	5.00
1970	2.62	.10	1.84	4.57
1971	2.59	.13	2.06	4.78
1972	2.66	.12	2.22	5.00
1973	2.81	.10	2.01	4.92
1974	2.86	.11	1.73	4.70
1975	2.71	.10	1.52	4.33
1976	2.76	.08	1.89	4.73
1977	2.96	.09	1.74	4.79
1978	2.78	.08	1.80	4.66
1979	2.26	.09	1.73	4.08
1980	1.86	.07	1.51	3.44
1981	1.72	.04	1.09	2.86
1982	1.50	.06	.94	2.50
1983	1.89	.08	1.68	3.65
1984	2.09	.03	1.56	3.68
1985	2.17	.06	1.82	4.05
1986	2.31	.09	1.96	4.36

Sources:

California Department of Forestry and Fire Protection
California State Board of Equalization
Bureau of Indian Affairs, USDI
Bureau of Land Management, USDI
Forest Service, USDA

California now relies on imports for more than one half of its overall timber product needs. Although California receives only a small proportion of its imports from Canada, Canadian shipments to the U.S. have a significant effect on the State's ability to import timber products from the Pacific Northwest. In contrast to California's reliance on imports, the bulk of the timber products produced in both Washington and Oregon is exported to other States and countries. Increases in Canadian shipments to the eastern half of the U.S. have displaced timber products from the Pacific Northwest. The result has been an increase in the availability of timber products from the Pacific Northwest for California markets. Increased production in the South has also been displacing the Pacific Northwest in eastern markets, which has also increased the availability of products from the Northwest in California markets.

III. Broad Level Socioeconomic Effects

About 95 percent of California's population lives in urban areas. As consumers, the primary effect of changes in harvest levels in the state on them is a change in prices paid for timber products. A reduction in timber harvests in the State reduces competition among suppliers, raises market prices, and leads to increased use of imported products. Econometric analysis done for the 1985 RPA indicates that a one billion board foot change in harvest level would change lumber prices by about three percent. This translates into a \$250 change in the price of the typical new house. For the U.S. economy as a whole, this would amount to a cost to consumers of about \$400 million annually.

Another effect on the urban population is through 'indirect and induced' employment. While the employment effects of changes in harvest levels is felt most strongly in the communities where the logging and sawmilling takes place, some broader level employment effects also occur. This is because most firms that manufacture and supply goods and services to logging and sawmill companies are typically located in the major urban centers rather than in the rural areas where the logging and milling takes place.

Logging and milling by itself typically requires 4 to 7 person years of employment per million board feet processed. This direct employment generates indirect employment in firms that supply goods and services to logging and milling firms and induces employment in firms and governments providing goods and services to those employed directly and indirectly. In undeveloped rural areas there is little if any indirect and induced effect because suppliers are located outside of the area and logging and sawmilling employees must 'drive into the city' to make major purchases. In addition, on most National Forests a portion of the logs harvested are trucked well outside of the primary zone of influence for manufacturing into lumber products. As a result, total Statewide employment effects of changes in harvest levels are larger than employment effects occurring in the primary zones of influence for individual National Forests. Employment effects on a Statewide basis range between 10 and 20 person years per million board feet of timber harvested.

IV. The Outlook for Timber Supplies - Private Lands

Based on an examination of timber growth and inventory levels compared to historical harvest levels, timber supplies from private lands in California are likely to be maintained at present levels or increase over the 10 to 15 year life of the Forest Plans. Recent harvest levels and timber growth and inventory levels are shown in Table N 2. Private harvests averaged 2 billion board feet annually over the period 1978-1985. This compares with sawtimber growth on private lands of 2.3 billion board feet annually. Current private sawtimber inventory is 86.8 billion board feet, or the equivalent of a 43-year supply (not counting growth) at current harvest rates.

The picture changes somewhat when growth and inventory levels are divided among the major private ownership classes. Nonindustrial private owners hold 38 percent of the sawtimber inventory. These owners account for a similar percentage of annual sawtimber growth. Historically, these owners have harvested a much smaller percentage of the timber growth and inventory on their lands than have large industrial owners. Statewide, harvests from nonindustrial private owners have averaged only about 30 percent of annual sawtimber growth. This proportion has been higher in the northern parts of the State and lower in the central and southern Sierra.

With increasing urbanization there is also the likelihood that the harvest rates on nonindustrial private ownerships may decline in the future.

Industrial owners hold **62** percent of the private sawtimber inventory. In contrast to nonindustrial private ownerships, harvest rates on industrial ownerships are **23** percent higher than annual growth. This means that without significant increases in growth, inventory depletion could lead to declining harvest levels in the next century. Inventory statistics suggest that such a decline is not likely to occur during the **10 to 15** year life of the Forest Plans. Moreover, the need of some of the larger industrial ownerships to increase cash flow as a result of recent corporate mergers, acquisitions, and industrial timberland purchases is resulting in increased harvest levels on these ownerships that are likely to persist during the life of the Forest Plans.

Area	Average Annual Harvest, MMBF 1978-1985	Net Annual Sawtimber Growth MMBF, 1982-1984	Sawtimber Inventory BBF, 1982-1984
North Coast	949	981	34.9
Northern Interior	520	563	18.0
Sacramento	415	502	20.7
San Joaquin	131	145	5.8
Other Areas	22	141	7.4
All Private Land	2037	2332	86.8
Industrial Private	1785	1458	53.8
Nonindustrial Private	252	874	33.0

Source:

Harvest data from California State Board of Equalization and forest inventory data from Pacific Northwest Forest and Range Experiment Station, Forest Service, USDA as compiled by the California Department of Forestry and Fire Protection-Forest and Rangeland Resources Assessment Unit.

V. Outlook for Timber Supplies - Imports

As discussed above, the Pacific Northwest is the primary source of imported timber products in California. Through displacement effects in national markets, Canada and the South also play a major role in determining the supply of timber products from the Northwest that is available to California markets.

According to studies conducted in Canada and studies by Forest Service research units, timber supplies from Canada and the South are likely to increase, but at a slower rate than experienced over the last **20** years during the life of the Forest Plans. Moreover, a decline or fall down in supplies from Canada and the South is in prospect for the next century without an increase in investment and timber growth.

A decline in timber harvests in the Pacific Northwest over the next **10 to 15** years is expected. This is due to reduced availability of timber inventories on both public and private lands.

The overall outlook is that imports will continue to grow to support increased demands by California consumers over the next **10 to 15** years. However, imports will likely increase at a lower rate than over the last **20** years and may decrease in availability beyond the year **2000**.

VI. The Outlook for Timber Supplies - National Forests

The allowable sale quantities set in individual Forest Plans are an indicator of future timber supply levels from National Forests in California. The allowable sale quantity places an upper limit on the average annual amount of green sawtimber from suitable timberlands that can be sold from a National Forest in the first ten year period of the Plan. Nonchargeable timber (dead timber and fuelwood from either suitable or unsuitable timberlands) is in addition to the allowable sale quantity. The addition of nonchargeable volume usually increases the total amount sold by a few percentage points. (See Table N.3.)

The amount of timber offered for sale in an individual year is determined through the budget process. When the amount of timber sold in an individual year is less than the allowable sale quantity, sales in future years may be higher than the allowable sale quantity, since the ASQ is a limit on the average annual amount that can be sold over a ten year period.

The total of planned timber sales in the individual National Forest Plans in Region 5 is about 1.8 billion boardfeet annually. This is slightly above the average volume sold and above the 1.6 billion boardfoot average volume harvested over the past decade. Excluding the period of severe economic recession that occurred in the early 1980's, timber output under the Plans is slightly less than the 1.85 billion boardfoot average annual harvest during the decade of the 1970's. Output under the Plans is equal to the 1985 RPA 'high bound' program sale offering goal of 1.8 billion board feet for the year 1990.

VII. The Subregional Outlook - Overview

The picture is somewhat different when observed at the subregional level. Based on the historical pattern of log flows to mills, the State can be divided into six timber market areas: North Coast, Northern Interior, Sacramento, San Joaquin, Central Coast, and Southern California. National Forests play a significant role in the North Coast, Northern Interior, Sacramento, and San Joaquin areas.

Virtually all of the decline in the State's timber harvest that has occurred over the last 30 years has taken place in the North Coast market area on private lands. The outlook now is for relatively stable output from private lands over the 10 to 15 year life of the Forest Plans in all major market areas.

The relative contribution of National Forests to the timber supply differs markedly between market areas. In the North Coast area where the private timber supply has been falling most rapidly, National Forests supply only 13 percent of the timber. In the Northern Interior and Sacramento areas, National Forests supply 50 percent of the timber. In the San Joaquin area they supply 70 percent.

Allowable sale quantities under the Forest Plans are lower than historical average harvest levels in the Northern Interior area and higher than historical average harvest levels in all other areas. This means that adverse impacts on local economies resulting from the Plans will be centered in Northeastern California.

VIII. The Subregional Outlook in the North Coast Timber Supply Area

Timber harvests in the North Coast area over the past eight years have averaged 1.08 billion boardfeet annually. Harvests from National Forests account for 13 percent of the total volume harvested. The Six Rivers National Forest supplies 70 percent of the National Forest sawtimber milled in the area and the Klamath, Shasta-Trinity, and Mendocino National Forests supply the rest. Allowable sale quantities under the Forest Plans are above average sale levels during the last eight years by about 25 million boardfeet.

Private harvests in the area have averaged 949 million boardfeet annually over the past eight years. This is slightly less than annual sawtimber growth on private lands of 981 million boardfeet.

feet annually. Private sawtimber inventory is **35** billion board feet -- the equivalent of a 37-year supply (not counting growth) at recent harvest rates. Harvests on industrial lands are expected to increase by about **140** million board feet annually during the life of the Forest Plans as a result of the takeover of the Pacific Lumber Company by the Maxxam Group. The overall outlook is for relatively stable private harvests, but with declining average log diameters during the life of the Forest Plans.

There are **39** sawmills with a combined 8-hour shift capacity of **5.2** million board feet, lumber tally, in the North Coast area. This means that mill capacity is approximately double the available sawtimber supply on an annual basis.

Table N.3 - Average National Forest Timber Sales Compared to Allowable Sale Quantities in Forest Plan Preferred Alternatives

Timber Supply Area	National Forest	1979-86 Average Volume Sold, MMBF	Forest Plan Preferred Alternative MMBF
North Coast	Six Rivers	150.0	175.0
Northern Interior	Klamath (1)	223.6	198.0
	Modoc	59.5	52.0
	Lassen	174.7	154.0
	Shasta-Trinity	215.7	226.0
Sacramento	Mendocino (2)	80.7	93.0
	Plumas (3)	208.0	265.5*
	Tahoe	141.7	142.3*
	Eldorado (4)	146.7	138.0
San Joaquin	Stanislaus (5)	117.4	134.0
	Sierra	128.4	125.0
	Sequoia	77.2	97.0*
	Inyo (6)	12.8	7.0*
	San Bernardino	8.8	5.3*
	R5 Total	1,747	1812.0

- (1) Typically **100-130** MMBF of logs flow into Oregon. Most of this amount is from the Klamath National Forest.
 - (2) Mendocino logs typically flow **40** percent to the Sacramento area, **40** percent to the Northern Interior area, and **20** percent to the North Coast.
 - (3) Plumas logs typically flow **40** percent to the Northern Interior area, **60** percent to the Sacramento area.
 - (4) Eldorado logs typically flow **60** percent to the Sacramento area and **40** percent to the San Joaquin area.
 - (5) Stanislaus logs typically flow **20** percent to the Sacramento area and **80** percent to the San Joaquin area.
 - (6) Inyo logs typically flow **50** percent to the San Joaquin area and **50** percent to the Northern Interior area.
- * Indicates Final Plan value. All other figures are from Draft Plans.

IX. The Subregional Outlook In the Northern **Interior** Timber Supply Area

Timber harvests in the Northern Interior area over the past eight years have averaged 1.04 billion board feet annually. Harvests from National Forests account for 50 percent of the total volume harvested. The Klamath, Modoc, Lassen, Plumas, Shasta-Trinity, and Mendocino are the major National Forest suppliers in the area. Small volumes from other Forests have also been milled in the area (Six Rivers, Eldorado, Inyo, etc). Allowable sale quantities under the Forest Plans are below average sale levels during the last seven years by about 15 million board feet.

Private harvests in the area have averaged 520 million board feet annually over the past eight years. This is slightly **less** than annual sawtimber growth on private lands of 563 million board feet annually. Private sawtimber inventory is 18 billion board feet --the equivalent of a 35-year supply (not counting growth) at recent harvest rates. Harvests on industrial lands are expected to increase slightly because of the need to enhance profitability as a result of recent ownership changes.

There are 22 sawmills with a combined 8-hour shift capacity of 2.5 million board feet, lumber tally, in the Northern Interior area. This means that mill capacity is somewhat above the available sawtimber supply on an annual basis.

X. The Subregional Outlook In the Sacramento Timber Supply Area

Timber harvests in the Sacramento area over the past eight years have averaged 880 million board feet annually. Harvests from National Forests account for 50 percent of the total volume harvested. The Plumas, Tahoe, and Eldorado are the dominant National Forest suppliers, but volume from the Lassen, Shasta-Trinity, Mendocino, and Stanislaus is also milled in this market area. Allowable sale quantities under the Forest Plans are above average sale levels during the last eight years by about 60 million board feet.

Private harvests in the area have averaged 415 million board feet annually over the past eight years. This is less than annual sawtimber growth on private lands of 502 million board feet annually. Private sawtimber inventory is 21 billion board-feet-- the equivalent of a 42-year supply (not counting growth) at recent harvest rates. Harvests on private lands are expected to be maintained near present levels during the 10 to 15 year life of the Forest Plans.

There are 22 sawmills with a combined 8-hour shift capacity of 2.8 million board feet, lumber tally, in the Sacramento area. This means that mill capacity is about 25 percent above available sawtimber supply on an annual basis.

XI. The **Subregional Outlook** In the San Joaquin Timber **Supply** Area

Timber harvests in the San Joaquin area over the past eight years have averaged 407 million board feet annually. Harvests from National Forests account for 70 percent of the total volume harvested. The Stanislaus, Sierra, and Sequoia are the dominant National Forest suppliers, but volume from the Eldorado, Inyo, and San Bernardino is also milled in this market area. Allowable sale quantities under the Forest Plans are above average sale levels during the last eight years by about 25 million board feet.

Private harvests in the area have averaged 131 million board feet annually over the past eight years. This is less than annual sawtimber growth on private lands of 145 million board feet annually. Private sawtimber inventory is 5.8 billion board feet -- the equivalent of a 44-year supply (not counting growth) at recent harvest rates. Harvests on private lands are expected to be maintained near present levels during the 10 to 15 year life of the Forest Plans.

There are 14 sawmills with a combined 8-hour shift capacity of 1.8 million board feet, lumber tally, in the San Joaquin area. This means that mill capacity is over 60 percent above the available sawtimber supply on an annual basis.

References

Hiserote, Bruce A, and James O. Howard, *California's forest Industry, 1976*, USDA Forest Service, Pacific Northwest Forest and Range Experiment Station, 1978.

Howard, James O., *California's forest Product Industry: 1982*, USDA Forest Service, Pacific Northwest Forest and Range Experiment Station, 1984.

Ruderman, Florence K., and Debra Warren, Production, Prices, *Employment* and Trade in Northwest forest Industries, USDA Forest Service, Pacific Northwest Forest and Range Experiment Station, quarterly.

USDA Forest Service, America's Renewable Resources: A *Supplement* to the 1979 Assessment of the forest and Range Land Situation in the *United States*, February 1984.

USDA Forest Service, An Analysis of the Timber Situation in the *United States 1952-2030*, December 1982.

USDA Forest Service, An Assessment of the Forest and Range Land Situation in the United, January 1980.

USDA Forest Service, *Regional* Guide for the *Pacific* Southwest Region, August 1984.

USDA Forest Service, The *South's Fourth* forest, *Alternatives* for the *Future*, (review draft), 1986.

APPENDIX O. BIBLIOGRAPHY

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BIBLIOGRAPHY

Barrett, R. H and S Martin 1987. Administrative Study of the Relationships Between Forest Management and Furbearer Habitat Productivity. Final Report. Supplement RO-33 under Agreement No. 21-395 Univ of Calif., Berkeley. 222 p

California Department of Parks and Recreation 1975 California State Comprehensive Outdoor Recreation Plan pp. 82-102

California State, Department of Parks and Recreation. 1982 Recreation Activity in California and Ten Regions of the State (Recreation Pattern Study)

California State, Department of Parks and Recreation 1980. Recreation Outlook in Planning District 2. pp. 14 and 23.

California State, Department of Parks and Recreation. 1980. Recreation Outlook in Planning District 3

California State, Department of Parks and Recreation. 1970. Scenic Route - A Guide for Official Designation of Eligible Scenic Highways - (Master Plan - Fold out map) Pamphlet No. 81219-500 11/70. 47 pgs

California State Water Resources Control Board 1975 Water Quality Control Plan Report (and Amendments). Central Valley Region. Sacramento River Basin (5A).

California State Water Resources Control Board 1975. Water Quality Control Plan Report (and Amendments) Lahontan Region. North Lahontan Basin (6A).

Davis, Jerry W, Gregory A Goodwin, and Richard A Okenfels 1983 Snag Habitat Management: Proceedings of a Symposium. USDA Forest Service Gen. Tech Report RM-99.

Department of Water Resource. Northeastern Counties Ground Water Investigation. DWR Bulletin No.98

Dornbusch and Company, Incorporated 1981. Socio-Economic Overview. Written for the TNF

Dost, Frank N. 1978. Toxicology of Phenoxy Herbicides and Hazard Assessment of Their Use in Reforestation. USDA, Forest Service, Region 5

Fowler, Cathrine. 1988 Habitat Capability Model for the Northern Goshawk. USDA Forest Service Report Tahoe National Forest.

Gregg, Edwin H. 1979. Dispersed Winter Sports Facility Plan, TNF Unpublished

Hammond, David. 1981. Nordic Skiing, A Trail System for the Truckee Ranger District Unpublished.

Hargis, T. 1982. Winter Habitat Utilization and Food Habits of Pine Martens in Yosemite National Park Tech. Rpt. No. 6. Western Region, National Park Service. 58 p.

Haynes, Richard W. et. al. 1980. Stumpage Price Projections for Selected Western Species, USDA Forest Service Research Note, PNW - 367.

Hurley, Janet F. et. al. 1981. Wildlife Habitat Capability Models and Habitat Quality Criteria for the Western Sierra Nevada, Stanislaus National Forest.

- Marsh, S. J. et. al. **1984**. Wilderness Mineral Potential Assessment of Mineral- Resource Potential in U.S. Forest Service Lands Studied **1964-1984**. Vol. 1 and 2
- Mealey, S. P. et. al. **1983**. Setting Goals for Wildlife Habitat. tial in **U.S Forest Service Lands Studied 1964-1984** Vol. 1 and 2
- Mealey, S. P. et al **1983**. Setting Goals for Wildlife Habitat. Forest Planning. Vol. 4. No 7. pp 16-19.
- Nomil, L **1981**. The Movement, Persistence, and Fate of Phenoxy Herbicides, and TCDD in the Forest PSW Forest and Range Experiment Station.
- Johnson, K. Norman et. al. **1980**. Forest Planning Model (FORPLAN) User's Guide and Operations Manual, USDA Forest Service
- Raphael, Martin G. and Marshall White. **1984**. Use of Snags by Cavity-Nesting Birds in the Sierra Nevada. J. Wild. Management, Wildlife Monograph No. **86**.
- Ron, Clark et. al. **1981**. Discount Rate for Long-Term Forest Service Investment, Journal of Forestry, June **1981**.
- Salwasser, H. et. al **1981**. An Ecosystem Approach to Integrate Timber and Wildlife Habitat Management Proc. North American Wildlife and Natural Resource Conference.
- Sanders, Susan D. and Mary Anne Flett **1988**. Geology of a Sierra Nevada Population of Willow Flycatchers (*Empidonax traillii*) **1986-87**. Calif Dept. of Fish and Game Admin Report 88-3.
- Serena, Melody **1982**. Status and Distribution of the Willow Flycatcher in Selected Portions of the Sierra Nevada, **1982**. Calif. Dept. of Fish and Game Admin Report 82-5
- Simon, T. L. **1980**. An Ecological Study of the Marten in the Tahoe National Forest, California **M. A Thesis**. Calif. State Univ., Sacramento. **187 p**.
- Smith, David M. **1962**. The Practice of Silviculture. Seventh Edition **1962**. John Wiley and Sons, Inc.
- SRI International. **1981**. A Case-Control Study of the Relationship between Exposure to **2,4-D** and Spontaneous Abortions in Humans.
- State of California. **1977**. Logging and Sawmill Safety Orders. Title 8 Industrial Relations, Chapter 4.
- Thomas, Jack W. **1979**. Wildlife Habttats in Managed Forests: The **Blue** Mountains of Oregon and Washington. USDA Forest Service Ag. Handbook No. 553.
- US Corps of Engineers. **1975**. Floodplain Information, North Yuba and Downie Rivers, Downieville, California, Prepared for Sierra County.
- US** Corps of Engineers. **1974**. Flood Plain Information, Truckee River and Martis Creek, Truckee, California. Prepared for Nevada and Placer Counties.
- USDA. National Forest Landscape Management Vol. 1 Agricultural Handbook 434.
- USDA. National Forest Landscape Management Vol 2 Agricultural Handbook 462
- USDA. Visual Management System. Agricultural Handbook 461.
- USDA, Forest Service. **1980** An assessment of the Forest and Range Land Situation in the United States.
- USDA, Forest Service. **1984**. Draft Environmental Impact Statement **1985-2030** Resources Planning Act Program. Appendix F.

USDA, Forest Service. 1981. Herbicide Background Statement PNW

USDA, Forest Service. 1971. Nation's Range Resources. Forest Resource Report No. 19.

USDA, Forest Service 1973. Roadless and Undeveloped Areas.

USDA, Forest Service, Regional Ecology Group. 1981 CALVEG - A Classification of California Vegetation. Region 5.

USDA, Forest Service, Region 5 1983. Draft Environmental Impact Statement - Vegetation Management for Reforestation. PSW.

USDA, Forest Service, Region 5 1974. Environmental Statement - Forest Reestablishment on National Forests in California.

USDA, Forest Service, Region 5 1981. Pacific Crest Trail Management Plan and Environmental Assessment.

USDA, Forest Service, Region 5 1980. Methodology for Evaluating Cumulative Watershed Impacts.

USDA, Forest Service, Region 5. 1979. RARE II Final Environmental Statement

USDA, Forest Service, Region 5. 1982 Recreation Information Management Report.

USDA, Forest Service, Region 5. The Region Five Timber Inventory Process.

USDA, Forest Service, Region 5. 1981. Regional Plan, Draft and Draft Environmental Impact Statement

USDA, Forest Service, Region 5. 1979 Water Quality Management for National Forest System Lands in California (208 Plan)

USDA, Forest Service, Tahoe National Forest. 1984 AMS, Analysis of the Management Situation.

USDA, Forest Service, Tahoe National Forest. 1984 Identification of Lands Tentatively Capable, Available, and Suitable for Resource Management.

USDA, Forest Service, Tahoe National Forest. 1975 Master Forest Landownership Adjustment Plan.

USDA, Forest Service, Tahoe National Forest. 1980. Multiple Use Plans - Downieville, Foresthill, Nevada City, Sierraville, and Truckee Ranger Districts.

USDA, Forest Service, Tahoe National Forest. 1979 and 1978, respectively. North Fork American Wild River Management and Development Plan and Draft Environmental Statement.

USDA, Forest Service, Tahoe National Forest 1978. Off-road Vehicle Travel Plan.

USDA, Forest Service, Tahoe National Forest. 1981. Planning Criteria, Land and Resource Management Plan. Includes Decision Criteria, Process Criteria.

USDA, Forest Service, Tahoe National Forest. 1981. Planning File - Standards, Instructions, and Coding Definitions.

USDA, Forest Service, Tahoe National Forest. 1980 Planning Issues

USDA, Forest Service, Tahoe National Forest. 1981 Reference Book of Practices.

USDA, Forest Service, Tahoe National Forest. 1981. Socio-economic Overview. Analysis of the Management Situation.

USDA, Forest Service. Tahoe National Forest. **1981**. Tahoe National Forest Soil Resource Inventory, Standards, Procedures and Mapping Legend.

USDA, Forest Service, Tahoe National Forest. **1984**. Tahoe National Forest Water Uses and Needs Inventory

USDA, Forest Service, Tahoe National Forest **1978**. Timber Management Plan and Environmental Statement.

USDA, Forest Service, Tahoe National Forest. 1980. Transportation Management Plan Environmental Assessment.

USDA, Forest Service, Tahoe National Forest and Plumas National Forests. **1978**. Mohawk Land Management Plan.

USDA, Forest Service, Tahoe and Toiyabe National Forests. **1977**. Truckee-Little Truckee Rivers Land Use Plan.

USDC, Bureau of Economic Analysis Regional Economic Analysis Division. **1977**. Industry-Specific Gross Output Multipliers for BEA Economic Areas.

US Environmental Protection Agency **1978**. Impact of Forestry Burning Upon Air Quality.

US Geological Survey. Water Resources Data for California.

Valentine, Bradley B. in prep. Livestock Management and Productivity of Willow Flycatchers in the Sierra Nevada Trans. Western Section, The Wildlife Society. **1988**.

Vemer, Jared and Allan Boss. **1980**. California Wildlife and Their Habitats: Western Sierra Nevada USDA Forest Service Gen. Tech. Report PSW-37.

APPENDIX P

**MANAGEMENT SCENARIOS FOR SPOTTED OWL
HABITAT AREAS BY ALTERNATIVE**

The following strategies for spotted owl habitat area (SOHA) management would occur with the **various** alternatives. The final management strategy for each network SOHA would be further defined during interdisciplinary development of individual SOHA management plans.

SOHA	PRF	CUR	RPA	CMD	NMK	UNE
A-1	U	E	E	E	U	U
A-2	E	E	E	E	E	E
B-2	N	E	E	E	N	N
C-1					N	
D-2	E	E	E	E	E	E
D-3	E	E	E	E	E	E
E-1	E	E	E	E	E	E
E-2	N	E	E	E	N	N
E-3	U	E	E	E	U	U
F-1	E	E	E	E	E	E
F-2	N	E	E	E	N	N
G-1		E	E		N	
G-2	N	E	E	E	N	N
G-3	N	E	E	E	N	N
H-1	N	E	E	E	N	N
I-1	N	E	E	E	N	N
I-2	N	E	E	E	N	N
J-1	N	E	E	E	N	N
K-1	N	E	E	E	N	N
L-1	N	E	E	E	N	N
M-1	N	E	E	E	N	N
N-1	N	E	E	E	N	N
O-1	N	E	E	E	N	N
P-1	N	E	E	E	N	N
Q-1	U	E	E	E	U	U
Q-2	N	E	E	E	N	N
Q-3	N	E	E	E	N	N
R-1	N	E	E	E	N	N
S-1	E	E	E	E	E	E
S-2	N	E	E	E	N	N
T-1	N	E	E	E	N	N
U-1	N	E	E	E	N	N
V-1	E	E	E	E	E	E
w-1	U	E	E	E	U	U
X-1	N	N	N	N	N	N
Z-1					N	
Z-2					N	
Z-3					N	
Z-4					N	
Z-5					N	

N = NO SCHEDULED HARVEST
 U = UNEVEN-AGED HARVEST
 E = EVEN-AGED HARVEST



United States
Department of
Agriculture

Forest
Service
Pacific

Southwest
Region

Tahoe
National
Forest



Appendix A

- **Public Participation**
- **Issues Concerns and Opportunities**
- **Forest Service Response to Comments**

Tahoe National Forest
Land and Resource
Management Plan



APPENDIX A

PUBLIC PARTICIPATION

ISSUES, CONCERNS AND OPPORTUNITIES

FOREST SERVICE RESPONSE TO PUBLIC COMMENTS

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APPENDIX A

PUBLIC PARTICIPATION ISSUES, CONCERNS, AND OPPORTUNITIES FOREST SERVICE RESPONSE TO COMMENTS

This appendix consists of four main parts. (I.) early public participation and scoping of issues before the Draft Environmental Impact Statement (DEIS) and Proposed Forest Plan were issued, (II) public review of DEIS and PFP, (III) list of respondents, and (IV) Forest Service response to public comments.

I. EARLY PUBLIC PARTICIPATION AND SCOPING OF ISSUES

A. Initial Scoping, 1979

The Forest planning process is based on public issues, management concerns, and resource **use** and opportunities. These issues, concerns, and opportunities were instrumental in formulating and understanding the consequences of implementing the alternatives. They enable the Forest Plan to be responsive to changing conditions.

During the initial scoping phase, the Pacific Southwest Regional Forester notified the public and other agencies of intentions to prepare a Land and Resource Management Plan for the TNF in the Federal Register, August 18, 1979. In November 1979, the Forest Supervisor published notices in local newspapers and in the Tahoe Planner newsletter that meetings would be held to accept public comment. Meetings were held in Sacramento, Nevada City, Auburn, Downieville, Sierraville, Reno, and Truckee. Approximately **50** people attended these meetings and 80 responses were received containing 500 individual issues. (Refer to TNF planning records, specifically 1922 16a2 These records are available for review at the TNF Supervisor's Office)

B. BROAD ISSUE CATEGORIES

Public comments and concerns were consolidated into 31 broad categories which included:

1. Wildfire **Losses**
2. Prescribed Fire
3. Administrative Facilities
4. Road-Trail Development
5. Transportation System Management
6. Private Development and Road Jurisdiction
7. Economic Feasibility of Regulation, Enforcement
8. Energy Efficiency in Transportation
9. Transportation Interface between Tahoe Basin and Tahoe National Forest
10. Soil Productivity and Capability - Retention
11. Kind, Type, Distinction - Fish, Wildlife
12. Range Capacity
13. Management of Sensitive Plants
14. Water Quality, Quantity
15. Water Production Allocation (Retention, Storage, Export)
16. Flood Plains, Wetlands
17. Minerals Area Management (Occupancy and Effect on Other Resources)
18. Energy Minerals (Geothermal)
19. **Use** of National Forest Lands for Offsite, Private (Non-National Forest) **Use**
20. Ownership Pattern (Effects of Interface)
21. Wilderness (Rare II Further Planning)
22. How Should Areas **be** Managed? (Motor Vehicle Closure)

- 23 Dispersed Recreation
- 24 Alpine Ski Area Expansion (Allocation)
- 25 Commodity Production - Impacts on Visual Quality
- 26 Developed Sites
- 27. Reforestation Release and Thinning Backlog (Vegetation Management)
- 28 Departure from Even Flow/(Socio) Economics/Employment/Economics of Management (Efficiency)
- 29. Management of Low Value Species (Hardwoods)
- 30 Fuels Treatment in Marginal Component
- 31 Silvicultural Prescriptions for Other Resources

C. ISSUE EVALUATION CRITERIA

The Interdisciplinary Team developed criteria in October 1979 to evaluate each issue and its relevance in the Forest's land management planning process. The scope, intensity, duration, resolvability, and consequences of the 31 categories were analyzed using the following criteria:

1. **Mandatory** - There is no discretion in using these criteria. They determine legality rather than priority of importance.
 - a. **Required** by NFMA, Regional **Guide**. The regulations require that certain mandatory issues be addressed in all Forest Plans, i.e., **RARE II**, inventoried roadless areas, timber allowable harvest, etc.
 - b. **Responsibility or** authority for resolution. The responsible official (Regional Forester, or as delegated by him, the Forest Supervisor) must have the responsibility **or** authority to resolve the issue.
 - c. **Scope**. The land or activities involved must be within the Tahoe National Forest or influenced directly by activities on the **Forest**. In addition, the issue must be specific to the Tahoe and not too broad (a Regional or National issue) or too localized (a single project-level issue). These criteria indicate the Forest Plan is the best place to address the issue (rather than in another level of plans).
2. **Discretionary** - The criteria under this subheading are optional since they have been developed to prioritize the remaining issues that will be addressed in the Forest Plan. They involve judgmental decisions by the Interdisciplinary Team and responsible official.
 - a. **Consequences**. The issue involves significant environmental (biological, physical, social, economic) cost or potential for irreversible environmental damage. Cost, in this sense, includes the reduction of a resource or activity for the benefit **of** a competing resource or activity.
 - b. **Resource Knowledge**. The resource specialists on the Tahoe National Forest must have the technical and scientific data, or the capability to collect this data, which is necessary to address the issue within the Forest Plan time frame.
 - c. **Intensity**. The issue has generated public response from a variety of groups representing different views or interests. **Some** indicators of this are lawsuits, appeals, polarization of groups, public comment, proposed legislation, etc.
 - d. **Land Allocation**. The issue involves what resources, goods, or services will be emphasized and where management activities will occur, rather than emphasizing how or when something will **be** done.
3. **Action to be Taken** - This involves the evaluation and degree of analysis **of** each of the public issues, management concerns, and resource **use** and development opportunities, including those identified through public participation activities.

D. NINE MAJOR ISSUES

The 31 broader categories were narrowed to nine major issues to be addressed in the planning process. These issues helped formulate alternatives and were included in a booklet entitled 'Planning Issues' which was approved by the Regional Forester in October 1980. (Refer to the TNF **EIS**, Chapter 2, for information on how the issues, concerns, and opportunities were used to formulate alternatives and their impact on present net values.)

Briefly stated, the nine major issues are.

- Ownership - Land Uses
- Minerals
- Energy
- Inventoried Roadless Areas*
- Water
- Recreation
- Facilities
- Forage, Wood, and Soils
- Wildlife

(* Name changed from Further Planning Areas, revised, 6/28/88)

Following are the issue statements for the nine major issues.

1. Ownership Patterns and Land Uses

Issue:

In what ways and to what extent can the Forest Service lessen or resolve conflicts between uses on National Forest, private, and other public ownerships within the Tahoe National Forest boundary? Some of these conflicts result from the conflicting desires and needs of different owners and the public in their resource management objectives.

Components and Indicators:

- a. What landownership adjustments should be made for community development or expansion?
- b. What ownership adjustments should be made for improved land and resource management?
- c. What should be the Forest Service direction within the Tahoe National Forest toward fire protection (structural and wildland) on intermingled private lands?
- d. How much of the non-Federally owned lands within the Tahoe National Forest boundary should be added to the National Forest System?
- e. When, where, and how should the Forest Service allow support services (sanitary landfills, green belts, roads, parking lots, etc.) required for adjacent private developments to be placed on National Forest System lands?
- f. What new areas should be allocated to utility rights-of-way, electronic transmission sites, and other public utilities?

2. Minerals

Issue:

What emphasis by the Forest Service should be placed on the surface management of mineralized areas within the Tahoe National Forest? This includes both locatable and leasable mineral resources.

Components and Indicators:

- a. Where conflicts between mineral operations and other resource programs occur, how can they best be mitigated?
- b. What should be the Tahoe National Forest direction for the development of common variety materials (sand, gravel, etc.)?
- c. What should be the Tahoe National Forest policy for suction dredging in the river system open to mineral entry?

d How should occupancy trespass be resolved?

3. Energy

Issue:

How should management of the Tahoe National Forest contribute to conserving energy and meeting future energy needs?

Components and Indicators:

- a. To what extent can the Tahoe National Forest land and resource management direction improve the energy efficiency of existing and planned facilities, including transportation and communication systems and buildings?
- b. Where, and to what extent, should energy resources such as fuelwood, hydropower, wind energy, and fissionable and geothermal energy be developed?
- c. What are the most energy efficient modes of transportation, such as mass transit for recreationists, off-highway routes for larger log haul trucks, etc.? Where and how can the Forest Service encourage the use of these transportation systems?
- d. What logging systems should be prescribed to harvest National Forest resources to balance energy conservation with other resource considerations?

4. Inventoried Roadless Areas (Revised 6/28/88)

Issue:

How should all inventoried roadless areas be managed on the Tahoe National Forest? (NOTE The California Wilderness Act of 1984 designated about 18,705 acres of National Forest System land of the Granite Chief RARE II area as wilderness and released the remaining ten roadless areas for nonwilderness uses in this round of planning.)

Components and Indicators

- a. What are the economic, social, and political consequences resulting from allocation of inventoried roadless areas on the Tahoe NF?
- b. Intense interest by some groups to obtain wilderness classification for certain areas on the Tahoe National Forest.
- c. Opposition by off-road vehicle users, the wood products industry, and some local governments to further withdrawals of National Forest System lands for wilderness use
- d. RARE II and recent United States Department of Agriculture directions require the Forest Service to study wilderness potential for Granite Chief, East Yuba, West Yuba, North Fork American River, Middle Yuba, Castle Peak, Bald Mountain, North Fork of the Middle Fork of the American River, Grouse Lakes, Duncan Canyon, and Lakes Basin
- e. Conflicts between developed and dispersed recreation uses and wilderness allocations

5. Facilities

Issue

How can the Tahoe National Forest management, operation, and development of its facilities (roads, trails, administrative facilities) be optimized with respect to user interests, resource management and human resource needs, private landowner concerns, and economic efficiency?

Components and Indicators:

- a. What road and trail systems are needed to access lands for National Forest resource management and public use? What policy should direct use of National Forest System lands for other ownership access, development, and protection needs?
- b. How should the Tahoe National Forest plan, manage, and operate its transportation system to integrate it effectively with private land access needs and with the 26 percent of the TNF's transportation system under State or county jurisdiction?

- c. In what areas do resource protection or user safety require control of recreation vehicles (both on- and off-road) or other traffic? What restrictions are necessary to accomplish this?
- d. What Tahoe National Forest administrative facilities are necessary to best meet the needs of future resource programs?

6. Forage, Wood, and **Soils**

Issue:

How much area of the Tahoe National Forest should be managed for renewable commodity outputs (forage and wood)? How intensively should vegetation be managed to optimize commodity outputs? What Forest Service emphasis should be placed on the soil resource to maintain or enhance productivity?

Components and Indicators:

- a. How much wood should be harvested and where should this production be emphasized?
- b. What should be the amount, methods, and location of timber harvest and other silvicultural systems.
- c. How should the forage production potential be allocated among competing uses?
- d. What should be the level of use and development of National Forest System ranges on the Tahoe National Forest.
- e. RPA emphasizes red meat production.
- f. Losses of grazing land to urban development and other uses.
- g. Public scrutiny of current management practices.
 - (1) Public controversy over the use of herbicides.
 - (2) Criticism of clearcutting practices on Tahoe National Forest System land
 - (3) Public concern that current Forest Service timber management practices promote monoculture and that genetic diversity of timber land is being diminished.
 - (4) Recent criticism that the Forest Service is managing marginal land for timber production. Current USFS definition of commercial forest land is that which is capable of producing 20 cubic feet/acre/year Critics maintain that 50 cubic feet/acre/year is more appropriate
- h. The reforestation and timber stand improvement backlogs are a political issue.
- i. Employment and stability in local communities dependent on, or affected by, Tahoe National Forest timber supply.
- j. Direction that consideration be provided to timber harvest schedules which depart from the current policy of even-flow, nondeclining yield
- k. There is a continuing interest to increase the timber harvest on Federal lands.
- l. The demand for wood fiber for home heating as an alternative or supplemental energy source.
- m. What should the Forest Service policy be to maintain or enhance soil productivity?
- n. Forest management activities are being intensified without the full knowledge of the soil's potential for long-term production.
- o. Some old logging and mining areas have large areas of disturbed soils.
- p. Forest regeneration has not been successful on some soils.
- q. Some commercial forest land should be classified as noncommercial or marginal for timber production.
- r. How should the Tahoe National Forest manage woodlands not presently managed for sawtimber (e.g., oak woodlands, pinyon-juniper, low-site conifers)?

7. Water

Issue:

How should the management of Tahoe National Forest resources respond to the demands and allocations for water quality, quantity, storage, and transmission?

Components and Indicators

- a. What should be the management emphasis to increase available runoff or to alter timing of flow?
- b. What are the water requirements for on-Forest use for management of resources? What quality standards should be established to meet these requirements?
- c. To what extent can the Tahoe National Forest respond to increasing off-Forest needs for water, including timing of flows and water quality?
- d. How should existing and future water storage projects be used for recreational and fishery purposes?
- e. What is the role of the Tahoe National Forest in providing land for future impoundments?
- f. What is the Tahoe National Forest's role in providing off-stream storage to meet peak power demands through hydroelectric generation?
- g. How does the Tahoe National Forest assess the instream flow needs with other beneficial uses?
- h. What is the fair share of change in water quality to be allocated to on-site National Forest uses versus off-site uses?
- i. To what extent should overall watershed integrity and water quality (cumulative watershed effects) be influenced by Tahoe National Forest activities

8. Recreation

Issue:

To what extent should Tahoe National Forest lands be allocated for recreation and scenic purposes? What should be the mix of recreation uses on Tahoe National Forest land?

Components and Indicators:

- a. What is the demand for developed winter sport sites, and how can and where shall the Tahoe National Forest meet the Regionally allocated share?
- b. What is the desired mix of recreational activities on the Tahoe National Forest?
- c. How should areas previously identified as roadless be allocated in terms of recreational opportunities?
- d. Public demand is increasing for nonmotorized access to backcountry areas and for primitive or limited facility recreation experiences. At the same time, demand is increasing for off-road vehicle access to the same areas.
- e. Increased demand for use of other commodities in backcountry areas could depreciate the backcountry experience or the perceived undeveloped environment
- f. Conflicts between off-road vehicle use, nonmotorized recreation access, and hunting and fishing use.
- g. There are existing and potential conflicts with adjacent private land.
- h. Popularity of Nordic skiing and snowmobiling on the same areas
- i. Crowding of existing parking areas for dispersed use occurs during winter
- l. There is a high demand for alpine skiing. Existing developed sites are becoming overcrowded on weekends and holidays.
- k. Continuing interest in interconnecting ski developments in the Sierra Crest area.
- l. Increased popularity in Nordic skiing is resulting in a demand for base facilities. Should these facilities be located on private or public lands?
- m. There is a continuing interest in developed snowplay areas.
- n. What priority should be given to managing the scenic values of the Tahoe National Forest?
- o. Application of VQO's, according to current visual resource management direction, to land adjacent to or visible from Forest development roads can, in turn, restrict use of the resources for which the roads were built.
- p. What should be the Tahoe National Forest management direction along scenic highways?
- q. Energy shortages may cause some shift in recreation use, the trend is inconclusive to date.
- r. How should the conflicts between visual resource management Objectives and other resource Objectives be resolved?

- s There is a public demand for vistas of natural-appearing forest landscapes.
- t What areas now allocated to summer homes should be retained or be reallocated to different uses?
- u There are conflicting interests for additional Wild and Scenic River designation on some rivers. How should the Tahoe National Forest study and recommend rivers for additions to the National Wild and Scenic River System?
- v. Cultural resource protection is mandated by law. Forest Service management must meet these legal requirements

9. Fish and Wildlife Habitat

Issue:

What Forest Service emphasis should be placed on wildlife habitat to maintain or enhance productivity, quality, and diversity?

Components and Indicators:

- a How will viable populations be maintained over time?
- b. What level of protection should be given to important Forest diversity components?

E. INVENTORIED ROADLESS AREAS SCOPING - 1983

In November 1983, another formal scoping session was held in response to the decision by the U S. Ninth Circuit Court of Appeals which affirmed a lower court decision that the RARE II (Roadless Area Review and Evaluation) EIS was inadequate. This ruling did not apply to any areas on the Tahoe National Forest, however, it established a binding precedent in any Federal District Court within the Ninth Circuit. Due to this ruling, all inventoried roadless areas on National Forests in California were reevaluated and considered for recommendation as potential wilderness.

Over 50 people attended the scoping session on November 2, 1983. More than 60 individual responses were received regarding the roadless areas. (Refer to TNF planning records 1922-16) These responses were used to modify the descriptions for each area, the formulation of alternatives, and the revision of the issue statement. Respondents provided information on whether the areas were suitable or not for wilderness designation.

The California Wilderness Act of 1984 designated Granite Chief as Wilderness and required that the other areas be designated for uses other than wilderness. Therefore, the existing unroaded areas on the Tahoe were not evaluated for wilderness in this plan. Appendix G of the FEIS describes the management direction for each 'Roadless Area'.

F. CONSULTATION WITH OTHERS

In addition to the formal initial scoping process, numerous meetings and contacts were made with County governments, other agencies, private landowners, Indian tribes, and interest groups.

A workshop was held in January 1980 with representatives from the Central Sierra National Forests, California Resources Agency, Department of Parks and Recreation, Air Resources Board, Department of Fish and Game, California Boating and Waterways, Regional Water Quality Control Board, Department of Forestry, Department of Conservation, Department of Water Resources, Office of Planning and Research, State Lands Commission, and Division of Mines and Geology. Later in the month, the State's regional issues were received from the Resources Agency. These were general in nature and were considered in the Tahoe National Forest issue formulation process.

In April 1980, a letter was sent to Nevada, Placer, Plumas, Sierra, and Yuba County Planning Departments that provided an update on the current status of the planning process and an offer to meet with the Forest Planning Officer. Based on the response to this letter, the Forest planning staff met with Sierra, Nevada, and Yuba County planners during May 1980. The county planning departments discussed several issues and concerns with the Forest planning staff which were included in the Forest Issue package.

During that same month a letter was sent to 58 agencies, landowners, and Indian tribes to coordinate all planning events among the various entities. Responses and management plans were received from the following individuals and groups. Bureau of Land Management, Maidu Elders Organization, Mr. Sherman Chickering, Erickson Lumber Company, University of California at Berkeley - National Land and Water Reserves System, Placer County Planning Commission, Alpine Meadows Ski Area, Cal-Pacific Foresters, Inc., Nevada Division of Forestry, California Regional Water Quality Control Board - Lahontan Region, North Fork Association, DART Industries, and the Bureau of Reclamation. Letters were also received from several mining companies and associations. In addition to these comments and plans, the Sierra County Grand Jury Report, 1979 (Sierra County), Squaw Valley General Plan (Placer County), Nevada County General Plan (Nevada County), and the Management Plan for the Blue Canyon Deer Herd (California Department of Fish and Game) were reviewed and those concerns that were appropriate to the Tahoe were noted and used as the Forest Issues were formulated.

Continuing informal communication with the Sierra Club, Western Timber Association, County Boards of Supervisors, County Planning Departments, individuals, and adjacent National Forests (Plumas, Eldorado, and Lake Tahoe Basin Management Unit) had taken place since the early scoping period.

II. PUBLIC REVIEW OF THE **DEIS** AND PROPOSED FOREST PLAN

A. Document Distribution

On January 17, 1986, the Proposed Tahoe National Forest Plan and Draft Environmental Impact Statement were issued and the public review period began. Approximately 1500 documents were distributed to those on the Forest Plan mailing List (592) and to others who requested copies. The availability of the Proposed Plan was announced by news releases, notice in the Federal Register, and by letters to potentially interested individuals. All documents were dispersed and requests for copies exceeded supply. Interested individuals were referred to the following libraries that had loan copies, or sets of documents were loaned from the Forest Headquarters. With each set of documents, a letter to the reader was included which requested public suggestions and comments.

Libraries That Were Sent Copies of the Plan and DEIS

Placer County Library, Auburn; Placer County Library, Tahoe City; Sierra County Library, Alleghany, Sierra County Library, Downieville, Sierra County Library, Loyaltown, Sierra County Library, Sierra City; Sierra County Library, Sierraville, Nevada County Library, Grass Valley; Nevada County Library, Nevada City, Nevada County Library, Truckee, Sierra Club Library, San Francisco; Washoe County Libraries, Reno, NV, Yuba City Library, Yuba City; Yuba County Library, Marysville; North Columbia Schoolhouse Cultural Center, North Columbia, Sacramento Public Library, Central Library

California State University, Miriam Library, Chico, California State University Library, Sacramento, Sierra College Library, Rocklin; University of California Library, Berkeley; University of California Library, Davis, University of Nevada, Main Library and Life and Health Sciences Library, Reno

Forest Service Offices With Copies of the Plan and **DEIS**

Pacific Southwest Regional Office, San Francisco, Plumas National Forest Headquarters, Quincy, Mohawk Ranger Station, Blairsden; Challenge Ranger Station, Challenge, Lake Tahoe Basin Management Unit, South Lake Tahoe; Eldorado National Forest Headquarters, Placerville, Georgetown Ranger Station, Georgetown, Pacific Ranger Station, Pollock Pines; Toiyabe National Forest Headquarters, Reno, NV; Carson Ranger Station, Carson City, NV; Tahoe National Forest Headquarters, Nevada City; Nevada City Ranger Station, Nevada City; North Yuba Ranger Station, Camptonville; Foresthill Ranger Station, Foresthill, Sierraville Ranger Station, Sierraville, Truckee Ranger Station, Truckee;

B. Public Meetings/Open Houses/Hearings

During the first month of the comment period 8 meetings were sponsored by the Forest Service to introduce the plan to the public. Meetings were held in the evenings in Truckee, Sierraville, Downieville, Camptonville, North Columbia, Grass Valley, Foresthill, and Auburn. The meetings were generally 3

to 4 hours long and explained the LMP process in general, the history of the National Forest Management Act, an overview of the Forest, the alternatives in the DEIS, and a summary of the Proposed Plan and its effects on the Forest. A question and answer period was held at the end of each meeting. Over 500 individuals attended these sessions.

In the third month of the comment period, open houses were held during the afternoon and evening at each Ranger District to individually work with members of the public with questions or concerns about some aspect of the Forest Plan. Approximately 46 people attended these open houses.

When invited by various groups or boards, presentations by members of the Interdisciplinary and Management Teams were made at approximately 25 additional meetings to further introduce or explain the Proposed Plan.

The comment period was extended from April 18, 1986 to June 2, 1986, for a total of 137 days, to provide additional public review and comment time.

Three hearings were held two in Grass Valley and one in Truckee to give the public a chance to voice their concerns to the Forest Supervisor. Originally only two hearings were planned; however the interest in the Grass Valley hearing was so high that another one was scheduled to accommodate those who preregistered. Letters and news releases were mailed out announcing the hearings. Preregistration was advised, but registration at the door was also possible. Testimony was limited to 5 minutes per individual. The testimony was tape recorded and transcribed by a transcription service and included in the public comment analysis. Over 375 individuals attended the hearings with a total of 188 individuals presenting testimony to the Forest Supervisor.

A hearing was also sponsored by the Sierra County Board of Supervisors in Loyalton. The testimony was transcribed and entered as official comments.

C. Public Comment Analysis Process

As each letter was received, it was assigned a unique identification number. Each letter was coded to indicate the type of respondent (i.e., individual, elected official, organization, etc.), the number of signatures, and the location of residence or office origin. The letters were then read for content, and codes were given to each substantive comment to identify the subject matter of the various resource issues. A comment was assigned codes to indicate the major subject areas of the concern, reasons for the concern, geographical areas of the Forest of concern, and any alternatives mentioned. The verbatim comment was entered into the computer along with the corresponding identifier codes. Copies of each letter were also sent to the Forest Supervisor, Forest Planner, Public Affairs Officer, and the appropriate District Ranger.

A total of 12,253 letters, including form letters and petitions, were received within the comment period. An additional 516 letters were received after the comment period closed. Over 90,000 subject codes, 49,000 reason codes, 11,000 geographic location codes, and 8,700 alternative codes were recorded. The coding process was designed to assist in the sorting of and responding to those comments. The results were used to give general indications of interests and concerns as well as the range and intensity of thoughts and feelings.

1. Demographic Analysis

Letters were received from throughout the United States but primarily from California. Out of the 12,253 letters received, 46% were from residents in or adjacent to the Forest, including Placer, Nevada, Sierra, and Yuba Counties. Responses from the Bay Area accounted for 14%, and those from the Sacramento-Yolo Counties accounted for an additional 23%. Locally, the response percentages of the total number of letters were: Nevada County - 33%; Placer County - 10%; Sierra County - 2%; and Yuba County - 2%. Within Nevada County, the Grass Valley-Nevada City area generated the greatest number of responses with 27% of the total

Responses were received from many organizations, interest groups, agencies and elected officials. Over 87%, however, were received from individuals. Letters were received from 24 agencies and 27 elected officials.

2. Form Letters

Over 55% of the responses to the Proposed Plan were form letters. Two main types were received: one supporting the Sierra Club's Citizens' Alternative, and the other expressing concern for a decreased timber harvest volume and the resultant effects on the local economy and dependent jobs in local communities (including Butte County). Approximately 97% of the form letters represented the environmentally-oriented point of view and 3% the timber-oriented point of view. The majority of these form letters came from Grass Valley-Nevada City, Sacramento-Yolo Counties, and the Bay Area.

3. Issue Analysis

As previously noted, over 90,000 subject area codes and 49,000 reason codes were documented. Overall, the concern for clearcutting (12%) and maintaining the roadless Characteristics of previously designated roadless areas (8%) generated the most comment codes, with reforested timber plantations (5%), old-growth timber (5%), use of herbicides (5%), and the demand for timber (4%) following in frequency.

Timber - Over 47% of the comment codes concerned timber-related issues. Clearcutting received the greatest number of comment codes in the timber department. Many individuals also expressed concerns about the Forest's ability to help meet the Nation's timber demand and the economic effects on the local economies and jobs if the timber harvest volume were lowered.

Recreation - Comments on recreation-oriented subjects made up 21% of the total number of subject codes. The three issues that surfaced most often included roadless areas and the concern for building roads or harvesting timber in these areas, scenic quality, and non-motorized backcountry use.

Wildlife - Wildlife concerns accounted for 4% of the total number of subject codes. The main concern for wildlife was for its habitat. Other concerns were for fisheries and wild trout streams as well as wildlife in general.

Grazing - Opposition to grazing along streams and a need to increase fees for grazing were the two areas mentioned most often under the grazing category. The number of comment codes that addressed grazing accounted for 9% of the total. Approximately 85% of the comments on grazing were form letters.

Soil and Water - The major concerns addressing soil and water were for increased watershed and wetlands protection, and for a reduction of erosion or the potential for erosion. Approximately 1% of the total comment codes addressed soil or water.

Facilities, Lands, and Fire - With the exception of road building in previously designated roadless areas, very few comments were received on facilities, land ownership issues, and fire. Prescribed fire was associated with timber management practices. Comment codes on mining generated less than 1% of the total number of codes.

Economics - Economic comment codes accounted for 4% of the total. Concerns included effects of Forest Management on local jobs, economic value of both timber and recreation to the local communities, and 25% fund receipts to the local counties (twenty-five percent of the monies paid to the Forest Service for recreation, timber sales, etc. are returned to the local counties for roads and schools).

General Forest Management - Many of these comments were very general in nature. The number one concern from this category was a general desire to protect forest resources with or without the production of timber.

Specific Areas of the Forest - Over 200 areas in the Forest were mentioned with recommendations for those areas. The forest areas mentioned most often included the North Fork American River, Mt. Lola, Grouse Lakes, East Yuba, and Castle Peak. The majority of comments on these areas came from form letters. Other areas of concern included Bear Valley Campground, Rock Creek, Granite Chief, Truckee River, and the Scott Management Areas. The concerns for the North Fork American Wild River included the protection of the resources in the canyon and keeping the area in a roadless state for backcountry nonmotorized recreation. The majority of the letters addressing the Mt Lola-Independence Lake area requested the protection of Forest resources and opposed commercial ski development of the area.

Alternatives - Comments were received on all eleven alternatives proposed in the DEIS. In addition, a great deal of support was expressed for the Citizens' Alternative proposed by the Sierra Club (70% of which were from form letters). Considerable support was also expressed for Alternative I or a modified version of I, which would increase timber harvest levels over current amounts (21% were from form letters)

4. **Topics** and Responses

The comments pertaining to each resource were provided to the appropriate staff officer and the interdisciplinary team member. Comments were grouped into similar concerns called topics. These topics and corresponding responses *are* displayed in the following section. Over 1200 topics were developed. Each topic may represent one unique comment or the aggregation of hundreds of similar comments. The Forest Service answer to the topic is listed as the 'Response'.

D. Additional Consultation

As the Final Plan was developed, members of the Planning Team met with various agencies, industry representatives, and the environmental community. These groups assisted as alternatives were modified and the Final Plan developed.



Tahoe Free Public Camp, c 1925

RESOURCE CATEGORY	CODE	TOPIC NUMBERS	PAGES
Air Quality	AIR	A013-A017	A148 - A149
Alternatives	ALT	M006-M023	A150 - A151
Economics/Budget	ECN	B001-B090	A152 - A164
Fire/Law Enforcement	FLE	F001-F019	A165 - A169
General/Multiple Use	GEN	M001-M005 M024-M033	A170 - A172
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LIST OF RESPONDENTS

HOW TO USE THIS SECTION

All who commented on the Proposed Plan are listed alphabetically in this section. The codes listed behind each name on the following pages refer to the subject matter of their letter. The chart on the previous page defines the codes. It also shows the pages where the topics for each subject are found.

Because of the substantial number of letters that were received, the letters that were postmarked after the comment period closed were not included in the content analysis process unless the comments were new or unique. Those letters received after the comment period closed were numbered starting with 20,000.

LIST OF RESPONDENTS

This section contains a list of all public comments that were provided to the Draft Plan and DEIS. The general subject categories addressed by each of the comments are displayed next to the name and identification number of the respondent. Comments that were received after the comment period closed were not included in the content analysis unless the comments were new or those responses that were received during the comment period closed were given identification numbers beginning with 20,000.

		00882	- RICK ADAMS TBR
		00021	- ROBERT W. ADAMS CLC HRB TBR WLD
03833	1ST S F CORP. ANGELO MANCINI' ALT OLG	07793	- SHARI LEE ADAMS CLC ECN
09302	- DAVID & LAUREL AAGAARD CLC H2O HRB REC TBR VIS	00758	- SHARON L. ADAMS ECN TBR
05984	- MARI AARN ALT CLC HRB OLG REC RNG TBR WLD WRA	06935	- STEPHEN ADAMS ALT CLC TBR WRA
00852	- JACKA AARON REC	01973	- W ADAMS CLCTBR
06476	- ANN ABBOTT CLC	10846	- WILLIAM T ADAMS ECN
03500	- TAMRA ABBOTT CLC TBR	02684	- CHRISTINE K. ADAMS, C A CLC
09613	- CARLIE L ABBUTT ALT CLC TBR WRA	06519	- GORDON NELDER ADANG ALT CLC HRB OLG REC RNG TBR WLD WRA
06303	- KEITH ABDES CLC ECN RDS VIS	02733	- STEPHENADCOCK CLC REC TBR WRA
05899	- RAY ABEL ALT CLC ECN OLG RNG TBR VIS WRA	03320	- R ADDISON ALT CLC HRB OLG TBR WLD WRA
10978	- ALICIA ABELS ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	08480	- R ADDISON ALT CLC ECN OLG RNG TBR VIS WRA
03150	- WILLIAM R ABLE CLC HRB	08294	- NICOL ADELISON ALT CLC OLG TBR WRA
08492	- BETSY ABRAMS ALT CLC DRT HRB TBR WLD WRA	08291	- ANTHONY ADES CLC OLG TBR WRA
10206	- AMY ABRAMSON ALT CLC TBR WRA	08572	- LAURA ADKINS CLC OLG TBR WRA
08217	- GABRIELE ACCETTOLA CLC DRT H2O HRB OLG RDS RNG TBR WLD	01573	- RONALD G ADKINS GEN TBR WLD WRA
07255	- PHILIP ACCLEY ALT CLC TBR WRA	11667	- RONALD G ADKINS ECN TBR
10733	- KRISTIL ACQUAVIVA ALT CLC TBR WRA	02959	- ADVENTURE CONNECTION WENDY WEST CLC OLG TBR VIS
02928	- J J ACH WRA	03102	- MARY AENLEY ALT ECN GEN
02219	- MICHAELACKERMAN CLC REC	01875	- STANAFFONSO TBR
09304	- ACROSS CA CONSERVANCY JOHN OLM. STEAD. CLC DRT FLE GEN H2O HRB OLG TBR VIS WRA WSR	10195	- BONNIE AGARD. CLC
11248	- ACROSS CA CONSERVANCY, JOHN OLM. STEAD GENVIS	04601	- ORVIN AGEE ALT CLC TBR TRL WLD WRA
05821	- AERO ACTCEN ALT CLC HRB OLG REC RNG TBR WLD WRA	10676	- JIM & JANE M AGEE & B ALT CLC ECN OLG RNG TBR VIS WRA
04236	- WALTER & MARY ADAMAITIS CLC H2O HRB REC	09616	- EMILLO AGNEW ALT CLC TBR WRA
07945	- REGINA ADAME ALT CLC ECN GEN OLG RNG TBR VIS WRA	10188	- ROSS AGNUS, III TBR
02501	- KARI ADAMIETZ TBR	06554	- EDWARD AGREMONTI CLC
06947	- DAVID ADAMO ALT CLC TBR WRA	02601	- RAMIRO AGUILAR TBR
06810	- ANNE E ADAMS' ALT CLC FLE HRB OLG REC TBR TRL WRA	09596	- ELISABETHA AHART CLC RNG
04479	- AUDREY ADAMS ALT CLC HRB OLG TBR WLD WRA	20016	- LOUISE AHART. CLC ECN FLE FSH GEN H2O HRB LND PLN RDS REC RNG TBR TRL URB VIS WIN WLD
07055	- BETSY ADAMS ALT CLC HRB OLG REC RNG TBR WLD WRA	06234	- DENISE AHLSTROM ALT CLC HRB OLG REC RNG TBR WLD WRA
00997	- BRENT NELSON ADAMS CLC H2O OLG REC TBR VIS WLD	05510	- JULIA AHMADNAD ALT CLC TBR WRA
04681	- CYNTHIA ADAMS ALT CLC TBR WRA	05364	- JUNE AIMAN ALT CLC ECN OLG RNG TBR VIS WRA
00543	- D L ADAMS ALT CLC TRL	04437	- DONALD AINGER GEN TBR
08760	- EUGENE D ADAMS ALT CLC ECN OLG RNG TBR VIS WRA	00763	- IRA AINGER TBR
10843	- JANE ADAMS TBR	10513	- DANIELA AIROLA GEN H2O OWL RDS RNA TBR WLD
07812	- JEAN ADAMS ALT CLC TBR WRA	07366	- RAYA AITENBOFF CLC OLG TBR WRA
09388	- JENNY ADAMS ALT CLC TBR WRA	11228	- JOE AKERS ECN H2O TBR VIS
05588	- JESSE C ADAMS ALT CLC HRB OLG REC RNG TBR WLD WRA	02355	- WILLIAM AKERS CLC ECN TBR
08759	- JO ANNE B ADAMS ALT CLC ECN OLG RNG TBR VIS WRA	02401	- EDWIN C AKERSON TBR
02868	- LEANNE ADAMS' CLC	02163	- NAIDENNE AKERSON TBR
04450	- LEE ADAMS ALT ECN TBR	04597	- RICHIE ALBANY CLC TBR
08246	- LINDA ADAMS REC WRA	04478	- BRAHMAALBERTSEN ALT
		11189	- KASHI ALBERTSEN WLD
		00556	- KENALBERTSEN GEN
		08013	- KEN ALBERTSEN ALT CLC ECN OLG REC RNG TBR VIS WRA
		01950	- MR & MRS JERRY ALBRECHT GEN
		08745	- ANN ALBRIGHT CLC HRB LND OLG RNG TBR
		03150	- CHARLES ALBRIGHT CLC HRB

03150	- JERRY ALBRIGHT CLC HRB	8302	- ALMA R ALLES ALT CLC HRB OLG REC RNG
11896	- JAN ALBRIGHT CLC ECN HRB OLG TBR WRA		TBR WLD WRA
03026	- KERRI D. ALBRIGHT CLC REC TBR WLD	11221	- ALLIANCE FOR ENV & RES BRUCE OLSEN
03755	- JEANNIE ALCAMO: ALT CLC HRB OLG REC	11818	- HOWARD ALLISON ECN TBR
	RNG TBR WLD WRA	973	- L. ALLISON CLC ECN FLE FSH OLG REC TBR
09682	- TERESA ALCOCK ALT CLC TBR WRA		WRA
03500	- LIZ AWANA CLC TBR	2799	- ROBERT ALMANZA, ARCHITECT. ALT CLC
04592	- ADAM ALDEN CLC		HRB OLG TBR WLD WRA
04958	- HUGH & BARBARA ALDERDICE TBR	3883	- C ALMQUIST CLC OLG OWL TBR TRL
04187	- PAUL ALDERETE ALT CLC HRB OLG REC	1418	- EDWARD M ALNEY ECN TBR
	RNG TBR WLD WRA	9610	- JOANN L ALOHZAEF ALT CLC TBR WRA
09937	- JULIE ALDERSON CLC GEN HRB TBR	8445	- WILLIAM D ALONZO CLC
05554	- ELEN ALDES ALT CLC HRB OLG REC RNG	197	- JEANNETTE ALOSI CLC HRB RDS REC TBR
	TBR WLD WRA		VIS WRA
08310	- CYNTHIA ALDNZH ALT CLC HRB OLG REC	273	- JEANNETTE ALOSI CLC ECN HRB RDS RNG
	RNG TBR WLD WRA		TBR
11184	- DANIE ALEGNICE, MC ALT CLC ECN OLG	20500	- ROSANNE ALOSI TRL
	RNG TBR VIS WRA	1024	- ALPENGLOW SPORTS DAVE NETTLE TBR
04248	- BARBARA ALEXANDER CLC REC RNG TRL		WRA
	WRA	5907	- JUDITH ALPER ALT CLC ECN OLG RNG TBR
02882	- CHRISTOPHER D ALEXANDER ALT ECN GEN		VIS WRA
	TBR	6567	- ALPINE MANORS ASSOC BETTY B BUTTEN
06524	- CORINNE ALEXANDER ALT CLC ECN OLG		ALT REC
	RNG TBR VIS WRA	11074	- ALPINE MEADOWS G & R COMM MERRIT
02836	- JUDY ALEXANDER RNG TBR		CUTTEN GEN REC TBR TRL
08159	- MARY ALEXANDER ALT CLC HRB OLG REC	2838	- ALPINE MEADOWS HOMEOWNERS ASSN
	RNG TBR WLD WRA		GERALD E WRIGHT REC TBR TRL VIS WIN
03267	- ROBIN ALEXANDER HRB OLG WLD WRA		WRA
00774	- SCOTT ALEXANDER ECN TBR	3431	- ALPINE MEADOWS/GREENBELT MERRITT
04112	- SHIRLEY ALEXANDER ALT CLC HRB OLG TBR		CUTTEN CLC H2O REC TRL
	WLD WRA	6186	- ALPINE MEADOWS STABLES DAVID BYERS &
10960	- PATRICIA A ALEXANDER ALT CLC ECN FSH		DENNIS RODE REC
	H2O HRB SNP TBR TRL WLD WRA	8969	- ALPINE PLACE ASSN M MYMAN BATES JR
00218	- DOMINIC & INEZ ALI CLC		GEN REC TRL WRA
10467	- FRANK M ALINTZ ALT CLC TBR WRA	11207	- ALPINE SPRINGSWATER DST LEIGH ROVZAR
9091	- MARGARET ALK ALT CLC TBR WRA		CLC FLE FSH HRB LND RDS REC TBR
5798	- KAREN ALKIRE ALT CLC HRB OLG REC RNG	6730	- ALPINE SPRINGSWATER DISTRICT LEIGH H
	TBR WLD WRA		ROVZAR: CLC FLE FSH HRB LND PLN REC
5797	- STEPHEN ALKIRE ALT CLC HRB OLG REC		TBR
	RNG TBR WLD WRA	1373	- ALPINE VENEERS, INC EVANT. DAVIES ECN
6457	- ALL SPECIES PRO TBR		REC TBR VIS
11376	- ALL SPECIES PROJECTS PONDEROSA PINE	324	- ALTA SIERRA TIMBER INC KARL W MUNDT
	GEN REC TBR		ECN TBR VIS WRA
1002	- MR. & MRS. R H ALLARD CLC REC	263	- C ALTAIR ALT CLC GEN HRB
189	- BILL ALLAYARD REC WRA	8136	- MIGUEL A ALTIEN ALT CLC ECN OLG RNG
3682	- BILL ALLAYARD, H2O LND REC RNG TBR		TBR VIS WRA
5887	- ALLISON ALLEN ALT CLC HRB OLG REC RNG	3819	- LUELLE ALTMAN CLC
	TBR WLD WRA	7196	- SANDRO J ALUPIO ALT CLC TBR WRA
9011	- ALLISON ALLEN ALT CLC ECN OLG RNG TBR	5392	- MARIA ALVARADO ALT CLC HRB OLG REC
	VIS WRA		RNG TBR WLD WRA
5721	- ALLISON C ALLEN, ALT CLC HRB OLG TBR	2438	- KAREN ALVAREZ TBR
	WLD WRA	9179	- THOMAS ALVEY ALT CLC ECN OLG RNG TBR
10037	- BRIAN ALLEN CLC GEN HRB TBR		VIS WRA
9460	- CAMERON ALLEN ALT CLC ECN OLG REC	1944	- STEVEN & ANDRA ALVINE OLG RDS TBR
	RNG TBR VIS WLD WRA	8984	- AM RV CHICKERING RES ROBERT A COCK-
8016	- CHEREN ALLEN ALT CLC ECN OLG RNG TBR		RELL RNA
	VIS WRA	1665	- FRANK V AMARAL CLC TBR
1421	- CHERYL ALLEN GEN	750	- KERRY J AMATE GEN
762	- CLAYTON LEE ALLEN ALT GEN OWL	749	- TREA R AMATE GEN
8635	- EMMETLA G ALLEN ALT CLC HRB OLG REC	11238	- TED AMATO ALT TBR
	RNG TBR WLD WRA	789	- TED G AMATO ECN TBR
7976	- ETHA ALLEN ALT CLC HRB OLG REC RNG	1086	- JAMES W AMBROSIOUS ALT H2O REC TBR
	TBR WLD WRA	2263	- RODNEY AMCHAK ALT CLC FLE HRB OLG
7593	- J JUNE ALLEN ALT CLC ECN OLG RNG TBR		TBR WLD WRA
	VIS WRA	1791	- AMERICAN ALPINE CLUB ARMANDO M MENO-
8030	- SALLEE R ALLEN ALT CLC ECN OLG RNG		CAL III LND RDS REC RNATBR TRL WIN WRA
	TBR VIS WRA	8358	- AMERICAN FISHING SOC DEBORAH MCKEE
9458	- WILLIAM L ALLEN ALT CLC ECN OLG RNG		DRT FSH H2O OLG RDS RNG TBR VIS
	TBR VIS WRA		

9288	- AMERICAN FISHING SOC DEBORAH MCKEE: CLC FSH H2O OLG RDS RNA TER WLD	7606	- SUSAN R. ANDERSON: ALT CLC TBR WRA
11239	- AMERICAN FOREST PRODUCTS LARRY GONZALEZ ECN GEN	1339	- SUZANNE K. ANDERSON: CLC HRB RDS WRA
11211	- AMERICAN FOREST PRODUCTS JOHN PRICER: CLC TBR	1964	- SYLVIA ANDERSON: ALT CLC REC
1594	- AMERICAN STEEL MONTE ADAMS: ECN TBR	7001	- SYLVIA ANDERSON: ALT CLC TBR WRA
1592	- AMERICAN STEEL STEVEN LAFF: ECN	8162	- SYLVIA ANDERSON: ALT CLC HRB OLG REC RNG TBR WLD WRA
6216	- FRED AMERIO: ALT CLC ECN OLG RNG TER VIS WRA	1618	- SYLVIA E. ANDERSON: CLC HRB
8683	- EDWARD a MARGARET AMES: CLC H2O HRB REC TBR VIS	1718	- SYLVIA E. ANDERSON: CLC ECN HRB TER VIS WRA
11509	- JEFFREY S. AMES: CLC DRT HRB	2241	- SYLVIA E. ANDERSON: ALT CLC HRB
4094	- JIM & JOY AMES CLC HRB REC VIS WLD	1766	- TERRY ANDERSON: LND
10793	- ALICIA AMQENA: CLC ECN HRB TBR VIS WRA	4834	- THOMAS E. ANDERSON: ALT CLC ECN OLG RNG TBR VIS WRA
1648	- RITA AMIDON: CLC REC	5210	- TINA ANDERSON: ALT CLC HRB OLG REC RNG TBR WLD WRA
6853	- ELVA F. AMORFINI: CLC TBR	1610	- TODD ANDERSON: CLC HRB
7297	- DAVID G. ANDERSEN: ALT CLC TBR WRA	1960	- TODD ANDERSON: CLC HRB VIS
10124	- ALVIN S. ANDERSON: ALT CLC ECN OLG RNG TER VIS WRA	5939	- VIRGINIA ANDERSON: ALT CLC HRB OLG TBR WLD WRA
1005	- ANDREA ANDERSON: TBR	9609	- WILLIAM BRENT ANDERSON: ALT CLC TBR WRA
10825	- BYRON ANDERSON: CLC HRE OLG TBR WRA	11026	- SHARON ANDERSON: ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
3299	- CARL ANDERSON: ALT CLC TBR WRA	2966	- STEPHANIE ANDRASZ: CLC
5608	- CHELA ANDERSON: ALT CLC HRE OLG REC RNG TBR WLD WRA	4909	- GERRY ANDRE: ALT CLC ECN OLG RNG TBR VIS WRA
10867	- CHELA ANDERSON: CLC ECN FLE TBR	4910	- LANA ANDRE: ALT CLC ECN OLG RNG TBR VIS WRA
11224	- UNDY ANDERSON ALT OLG TBR	4911	- RITA ANDRE: ALT CLC ECN OLG RNG TBR VIS WRA
3128	- DALE ANDERSON: CLC ECN HRB RNG TBR TRL WRA	4975	- NORMAN ANDREKUS: CLC ECN
5247	- DARBY ANDERSON: ALT CLC HRB OLG REC RNG TBR WLD WRA	7359	- EVAN ANDRES: CLC OLG TBR WRA
4108	- DARLENE ANDERSON: ALT CLC HRB OLG REC RNG TBR WLD WRA	7925	- LLOYD A. ANDRES: CLC HRB TBR
4582	- DEBRA ANDERSON: CLC	6295	- NINA ANDRES: CLC ECN HRB TBR VIS WRA
8196	- EVA L. ANDERSON: ALT CLC HRB OLG TBR WLD WRA	6175	- SHEILA ANDRES ALT CLC OLG RDS
5132	- FRANK ANDERSON: ALT CLC HRB OLG REC RNG TBR WLD WRA	6987	- JACK ANDRESS: ALT CLC HRB OLG REC RNG TBR WLD WRA
10314	- GARY ANDERSON: ALT CLC ECN OLG RNG TBR WS WRA	10352	- FRANCIS ANDREW: ALT CLC OLG TBR
6950	- GEORGE ANDERSON: ALT CLC HRB OLG REC RNG TBR WLD WRA	5976	- R.R. ANDREW: ALT CLC HRB OLG REC RNG TBR WLD WRA
3253	- HILARY ANDERSON: CLC ECN FLE GEN HRE TBR	3150	- CYNTHIA ANDREWS: CLC HRB
10315	- JAMES R. ANDERSON: ALT CLC ECN OLG RNG TBR VIS WRA	8273	- D.S. ANDREWS: ALT CLC ECN OLG RNG TBR VIS WRA
3687	- JON ANDERSON: CLC ECN HRE TBR VIS WRA	7710	- JENNIFER ANDREWS: ALT CLC ECN OLG RNG TBR VIS WRA
2188	- JOSH ANDERSON: ALT CLC FSH	7975	- M.A. ANDREWS: ALT CLC HRB OLG REC RNG TER WLD WRA
6954	- JUDY ANDERSON: ALT CLC HRB OLG REC RNG TBR WLD WRA	103	- BARRY ANGELL CLC ECN HRB RNG TBR WRA
6585	- KRISTI L. ANDERSON: CLC	3899	- P.R. ANGELL: CLC TBR
3629	- KRISTINE ANDERSON: CLC	11464	- P.R. ANGELL: CLC TBR
1767	- LARRY ANDERSON: LND VIS	10921	- PATRICK ANGELLO: ALT CLC TBR WRA
7211	- LARRY D. ANDERSON: ALT CLC HRB OLG REC RNG TBR WLD WRA	3386	- CLIFF ANGLE: ALT ECN GEN
10316	- LINDA ANDERSON: ALT CLC ECN OLG RNG TBR VIS WRA	6489	- ANIMAL PROTECTION INSTITUTE CHERYL M. GOLDSMITH: ALT CLC GEN HRB OLG WLD
2414	- M.J. ANDERSON: ALT CLC HRB OLG TBR WLD WRA	5646	- ANN ANNE: ALT CLC HRB OLG REC RNG TBR WLD WRA
6392	- MARIAN ANDERSON: ALT CLC ECN OLG RNG TBR VIS WRA	10722	- HAROLD ANNEGARN: ALT CLC TBR WRA
11060	- MARK ANDERSON: ALT GEN REC TBR WRA	1300	- DAVID F. ANQUIANO: ECN REC TBR
1961	- MARY ANDERSON: CLC HRB	3704	- ROBERT ANTEL: CLC TBR
3500	- ETHEL ANDERSON: CLC TBR	8879	- ANTOINETTE ANTHONAH: CLC H2O HRB REC TBR VIS
3500	- MELVIN ANDERSON: CLC TBR	3400	- HOWARD ANTHONY: CLC TBR
3500	- SELDON ANDERSON: CLC TBR	2927	- WA. ANTHONY, JR.: CLC
8835	- MIKE a NANCY ANDERSON: GEN RDS	214	- JOHN M. ANTON: REC TBR WRA
1292	- PAMELA ANDERSON: CLC ECN REC TBR WRA	9329	- GARY ANTONIO: ALT CLC HRB OLG TBR WLD WRA
9678	- STEVEN ANDERSON: ALT CLC TBR WRA	6797	- JANET ANTONSON: ALT CLC HRB OLG REC RNG TBR WLD WRA

10024	- JASON ANTONUCCI. CLC GEN HRB TBR	2058	- JENNIE ARNDT ALT CLC GEN HRB TBR WRA
10769	- S ANUBHUTI ALT C HRB OLG REC RNG	1911	- TIM ARNDT CLC H2O OLG RDS TBR
	TBR WLD /RA	7	- ELIZABETH ARNETT GEN
6331	- ANNETTE ANZALONE CLC HRB OLG RDS	10292	- ARAITH ARNIS ALT CLC TBR WRA
5373	- GEORGE APLINGTON. ALT CLC ECN OLG	3150	- CAROLARNOLD CLC HRB
	RNG TBR VIS WRA	8903	- DONALD H ARNOLD ALT CLC ECN OLG RNG
4173	- JUDIE APPLE ALT CLC HRB OLG REC RNG		TBR VIS WRA
	TBR WLD WRA	3057	- HOWARD S ARNOLD. TBR
5438	- VERNON D. E. ALT CLC HRB OLG REC	11761	- HOWARD S ARNOLD GEN TBR
	RNG TBR WLD WRA	5118	- JENNIE ARNOLD ALT CLC HRB OLG REC
2243	- MR. & MRS. GREG APPLEBAUGH WRA		RNG TBR WLD WRA
9723	- CHARLETTE APPLEWHITE ALT CLC ECN OLG	8904	- LAURA ARNOLD ALT CLC ECN OLG RNG TBR
	RNG TBR VIS WRA		VIS WRA
10086	- TONY AQUILAN ALT CLC ECN OLG RNG TBR	953	- SUZANNAH K. ARNOLD CLC ECN OLG RNG
	VIS WRA		TBR WRA
4880	- GABRIEL ARANOW ALT CLC HRB OLG REC	10010	- WENDY ARNOLD. CLC GEN HRB TBR
	RNG TBR WLD WRA	1943	- MORRIS A ARNSTON, JR' TBR
4346	- RONARASHI ALT CLC H2O HRB OLG TBR VIS	3917	- KARLA ARONOW ALT CLC HRB OLG TBR
	WLD WRA		WLD WRA
4264	- WINIFRED ARBEITER. REC	2804	- KARLA A ARONOW. ALT CLC HRB OLG TBR
10253	- J W ARBI ALT CLC TBR TRL WRA		WLD WRA
10070	- GEORGE ARBOGAST. ALT CLC ECN OLG RNG	61	- JEAN C ARTMAN ALT REC RNG TBR VIS
	TBR VIS WRA	2045	- GEORGE ARTONETTE ALT ECN GEN
6036	- IRENE ARBOGAST ALT CLC ECN OLG RNG	41.3	- CHARLESW ASH ECNTBR
	TBR VIS WRA	878	- CHESTER ASH. ECN TBR
952	- ARCATA FOREST PRODUCTS JIM BROWN	20500	- TRUDE LEE ASH TRL
	ALT ECN TBR	20500	- YONA ASH. TRL
5208	- MATT ARCHER ALT CLC HRB OLG REC RNG	10053	- LAVERNE ASHBUKNER ALT CLC ECN OLG
	TBR WLD WRA		RNG TBR VIS WRA
5023	- MR. & MRS. THOMAS ARCHER. RNG	10061	- EM ASHBURNER ALT CLC ECN OLG RNG
4706	- CHELLA ARCHIBEQUE. TBR		TBR VIS WRA
5880	- VICKI ARCHIBEQUE. ALT CLC HRB OLG REC	9154	- JANICE ASHCRAFT ALT CLC HRB OLG REC
	RNG TBR WLD WRA		RNG TBR WLD WRA
6257	- WENDY ARDELL & CARRIE FRITSCH ALT CLC	3534	- RODGER & WONNE ASHER ALT CLC
	TBR WRA	8032	- DONNA ASHLEY ALT CLC ECN OLG REC
3311	- SARAH R. ARDEN CLC GEN RNG TBR WSR		RNG TBR VIS WRA
31.2	- MR & MRS R ARENA CLC ECN HRB TBR	163	- LAURA ASHLIN CLC HRB OLG REC RNG TBR
1519	- KENNETH ARENS TBR		WRA
11235	- ARENS BROS LOGGING DAN ARENS OLG	11034	- MICHAELS. ASHLOCK ALT CLC ECN FSH
	TBR		H2O HRB SNP TBR TRLB WLD WRA
8569	- TIM ARETT CLC GEN OLG TBR WRA	6853	- LEONARD ASHMAN CLC TBR
10965	- NANCY AREY ALT CLC ECN FSH H2O HRB	11072	- ASSN CA LOGGERS EDWARD ELLERS. TBR
	SNP TBR TRL WLD WRA	11256	- WILLIAM ASTLE. GEN TBR
6017	- SHANNONGARI ALT CLC HRB OLG REC RNG	5398	- ROBERT ASTONAVERO. ALT CLC HRB OLG
	TBR WLD WRA		REC RNG TBR WLD WRA
7833	- ROBIE ARIC-DOUCH ALT CLC TBR WRA	10627	- ANGELA ASTOR CLC H2O HRB REC TBR VIS
5854	- NICOLAS ARIZMENDI ALT CLC HRB OLG REC	3196	- DANATCHLEY ECN TBR
	RNG TBR WLD WRA	8399	- MIKE ATKENSON ALT CLC HRB OLG TBR
3009	- ELIZABETH ARKLEY ALT CLC FLE HRB OLG		WLD WRA
	TBR	703	- DANIELA ATKINS. TBR
11296	- TOM ARLINT CLC RDS TBR WRA	5712	- RUTH ATKINS ALT CLC GEN HRB OLG TBR
9538	- JAKE ARMOUR. CLC RDS		WLD WRA
6168	- WILLIAM H ARMOUR CLC	5822	- D JANGO ATKINSON. ALT CLC HRB OLG REC
6984	- HOLLI ARMSTRONG ALT CLC HRB OLG REC		RNG TBR WLD WRA
	RNG TBR WLD WRA	10889	- DJAHGO ATKINSON. CLC TBR
9065	- JAMES ARMSTRONG. ALT CLC TBR WRA	3414	- H ATKINSON CLC
7584	- KEELY ARMSTRONG. ALT CLC ECN OLG RNG	6820	- HAROLD & LILLIAN ATKINSON ALT CLC H2O
	TBR VIS WRA		HRB OLG REC TBR WLD WRA
6634	- MARIE ARMSTRONG REC	409	- JOHN B ATKINSON CLC FSH RDS TBR
4617	- PETER ARMSTRONG. CLC HRB OLG TBR WRA	461.6	- LAURIE ATKINSON CLC ECN TBR
6334	- RICHARD ARMSTRONG. CLC HRB RDS TBR	8487	- NATALIE & DENNIS ATKINSON ALT CLC HRB
	TRL VIS		OLG TBR WLD WRA
8241	- RICHARD ARMSTRONG REC	10432	- RICHARD ATKINSON CLC H2O HRB REC TBR
9170	- ROWLAND ARMSTRONG ALT CLC ECN OLG		VIS
	RNG TBR VIS WRA		

284	- MICHAELATTIE CLC RNG TBR VIS WRA	4271	HOWARD BACKER REC TRL WRA
7610	- AMY ATTIS ALT CLC TBR WRA	804	ROBERT M BACKER OWL TBR WRA
8651	- ARHO ATTON REC VIS	2345	- MICHAEL J BACKES TBR WRA
6152	- LOYD & BETTY ATWELL CLC HRB TBR	5239	- BRITT BACKLAND ALT CLC HRB OLG REC
423	- REX ATWOOD ECN TBR		RNG TBR WLD WRA
11316	- AUBURN CITY COUNCIL MAYOR GEORGE	5648	- ROB BACON ALT CLC ECN OLG RNG TBR
	BELAND' CLC GEN HRB TBR		WRA WRA
6354	- PHILIP AUCHARD ALT CLC HRB OLG REC	7223	- SUZANNE BACON ALT CLC HRB OLG REC
	RNG TBR WLD WRA		RNG TBR WLD WRA
10436	- LINDA AUDRADA CLC H2O HRB REC TBR VIS	4818	BILL BACORN ALT CLC ECN OLG RNG TBR
6828	- AUDUBON SOC GOLDEN GATE CHAPTER		VIS WRA
	STEVE GRANHOLM CLC ECN FSH H2O HRB	4817	- ROSE L BACORN ALT CLC HRB OLG REC
	OLG OWL REC SNP TBR WLD WRA		RNG TBR WLD WRA
2048	- AUDUBON NAPA-SOLANO MARGUERITE &	4693	- SUNNY BADEN ALT CLC TBR WRA
	VERNON GROSS ALT CLC OLG RDS RNG	3505	- CANDACE BADINER CLC HRB TBR WRA
	TBR WRA	2152	- JEAN & MICHAEL BAECKER ALT HRB
1308	- MILDREDAUER TBR	575	MR & MRS BAECKER TBR
2738	- VICKIE AUERBACH GEN	5335	- JASON BAEHR ALT CLC HRB OLG REC RNG
10981	- ANNIE AUGUST ALT CLC ECN FSH H2O HRB		TBR WLD WRA
	SNP TBR TRL WLD WRA	3153	- CALISTRO BAEZA ECN TBR
5370	- DENNIS AULT ALT CLC ECN OLG RNG TBR	4302	- MINDAUGIS BAGDON ALT CLC HRB OLG
	VIS WRA		RNG TBR WLD WRA
5369	- PEGGY AULT ALT CLC ECN GEN OLG RNG	5970	PAUL BAGUE ALT CLC HRB OLG REC RNG
	TBR VIS WRA		TBR WLD WRA
4912	- KATHY AUNDOM ALT CLC ECN GEN OLG	8749	- PETER BAHHER CLC HRB TBR TRL WLD
	RNG TBR VIS WRA	10923	- PETER BAHHER ALT CLC TBR WRA
132	- DOUG AUSTIN CLC ECN H2O HRB RNG TBR	7256	- WENDY BAHNEMAN ALT CLC TBR WRA
	VIS	10173	- KRIS T BAILAR CLC HRB
5979	- JAMES LARRY AUSTIN ALT CLC HRB OLG	7245	- CATHIE BAILEY ALT CLC ECN OLG RNG TBR
	REC RNG TBR WLD WRA		VIS WRA
9936	- MARTY AUSTIN CLC GEN HRB TBR	8880	- GLENN F. BAILEY CLC H2O HRB REC TBR
3569	- ANASTASIA M AVAZIS ALT CLC ECN OLG		VIS
	RNG TBR VIS WRA	7754	- HARRY H BAILEY ALT CLC ECN OLG RNG
10603	- MILDRED AVER CLC H2O HRB REC TBR VIS		TBR VIS WRA
7703	- JEANNIE AVILA ALT CLC ECN OLG ANG TBR	3632	- HELEN E. BAILEY CLC HRB WLD WRA
	VIS WRA	7639	- JAMES BAILEY ALT CLC TBR WRA
8745	- WILLIE AVILA CLC HRB LND OLG RNG TBR	8779	- JANINE M BAILEY ALT CLC ECN OLG RNG
11896	- JOHN AVILN CLC ECN HRB OLG TBR WRA		TBR VIS WRA
4185	- MARTHA AWARD & JOHN FARRELL ALT CLC	8776	- JOHN W. BAILEY ALT CLC ECN OLG RNG
	GEN TBR		TBR VIS WRA
10841	- ELIZABETH AXTELL TBR	9562	- LOIS W BAILEY ALT CLC ECN HRB OLG RNG
1022	- YANNAH AYAL CLC		TBR VIS WRA
6958	- TOM AYAR ALT CLC ECN OLG RNG TBR VIS	1231	MATTHEW A BAILEY ALT CLC HRB OLG
	WRA	1708	MATTHEW A BAILEY CLC ECN HRB TBR VIS
770	- RANDY AYER TBR		WRA
12038	- TODD AYLARD ALT TBR	688	BAILEY'S LOGGING SUPPLIES BILL BAILEY
10545	- TARA K AZEVEDE CLC GEN HRB TBR		TBR
3500	- SHARO AZNEDO CLC TBR	6289	- PHYLLIS BAILY ALT CLC TBR WRA
3758	- BARBARA AZZOPARDI ALT CLC ECN OLG	937	GIL BAIN FSH GEN TRL WLD
	RNG TBR VIS WRA	1127	- MARY BAINBRIDGE ECN TBR
3759	- DAVE AZZOPARDI ALT CLC ECN OLG RNG	1129	TOM BAINBRIDGE TBR
	TBR VIS WRA	1503	- THOMAS BAINBRIDGE III ECN REC TBR WLD
3757	- JOE AZZOPARDI ALT CLC ECN OLG RNG	6980	- GARY BAIRD ALT CLC ECN OLG RNG TBR VIS
	TBR VIS WRA		WRA
10021	- BOBBY D BACA CLC GEN HRB TBR	5355	- JEANETTE BAIRDON ALT CLC ECN OLG RNG
3500	- GAIL BACA CLC TBR		TBR VIS WRA
5653	- JASON BACHAMAN ALT CLC HRB OLG REC	3150	JR. BAIRDYN CLC HRB
	RNG TBR WLD WRA	9243	- PATRICIA BAJMER CLC GEN H2O TBR
3365	- C. BACHAND ALT CLC TBR WRA	10850	- BEATRICE BAKER ALT CLC TBR WRA
4316	- THOMAS BACHAND ALT CLC ECN HRB RDS	1308	- BETTY BAKER TBR
	TBR WRA	1346	- BEVERLY J BAKER CLC GEN HRB TBR WRA
1422	- MRS FREDERICKA BACHER JR CLC OLG	6412	- BENEDICT BAKER ALT CLC ECN OLG RNG TBR
	RDS REC RNG TBR WLD		VIS WRA
8338	- RACHAEL BACHMAN ALT CLC HRB OLG REC	9673	- CA BAKER ALT CLC HRB OLG TBR WLD
	RNG TBR WLD WRA		W
		10591	- C/ BAKER ALT CLC HRB OLG TBR WLD
			WR

6852	- CATHY A. BAKER. CLC TBR	4051	- JANELLEN BANDY CLC HRB OLG RDS TBR
1821	- DAVID BAKER OWLTBR	6853	- ELINOR S BANES CLC TBR
4858	- ELIZABETH BAKER ALT CLC HRB OLG REC RNG TBR WLD WRA	100	- ALAN BANFIELD ALT CLC HRB RDS TBR
6862	- FRANCES BAKER ALT CLC HRB OLG TBR WLD WRA	1012	- MARISHA BANISTER TBR
922	- GAIL BAKER ALT CLC HRB RNG WRA	11065	- BILL BANKA OLG TBR VIS
10091	- JOANN BAKER, ALT CLC ECN OLG RNG TBR VIS WRA	9939	- STOSH BANKSTEN' CLC GEN HRB TBR
1096	- MARYBAKER CLCRDS	265	- HOWARD BANOW CLC HRB RDS REC
4856	- MATTHEW BAKER ALT CLC HRB OLG REC RNG TBR WLD WRA	7018	- BECKY BANTISTA ALT CLC TBR WRA
4517	- MRS ROBERTBAKER CLC	10911	- C BANTOR TBR
2505	- ORION S BAKER. ALT DRT LND RNG TBR TRL	20124	- MICHAEL BAOD CLC GEN RDS TBR
10090	- ROY BAKER ALT CLC ECN OLG RNG TBR VIS WRA	12173	- MARY BAPTISTA VIS WLD WRA
7558	- S. BAKER ALT CLC ECN OLG RNG TBR VIS WRA	9898	- MARY E. BAPTISTA TBR VIS WLD WRA
7093	- TRACY BAKER ALT CLC HRB OLG REC RNG TBR WLD WRA	9260	- KIMBERLEY BARACOSA ALT CLC HRB
10321	- ZANE BAKER ALT CLC ECN OLG RNG TBR VIS WRA	255	- RENEEA BARALL CLC
1583	- BAKER HARDWOOD LUMBER G.O, BAKER. TBR	1629	- MICHAEL BARANOWSKI CLC ECN FSH H2O HRB LND REC RNG TBR URB WRA
4070	- J.B. BALCOMB. ALT CLC ECN HRB OLG TBR	5507	- SASHA BARANOWSKI. ALT CLC TBR WRA
3400	- DEBORAH BALDERAMA CLC TBR	5506	- DENISE BARAOWSKI-VANKRIEDT ALT CLC TBR WRA
9576	- CLARK BALDWIN ALT CLC ECN HRB TBR	3273	- WERNER BARASCH ALT CLC HRB OLG TBR WLD WRA
5844	- GABRIELE BALDWIN. ALT CLC HRB OLG REC RNG TBR WLD WRA	6283	- ROBERT BARBATO. ALT CLC TBR WRA
9446	- GLENN BALDWIN ALT CLC ECN OLG RNG TBR VIS WRA	4637	- CAROLE BARBER CLC TBR
3427	- G W BALDWIN, ALT CLC HRB OLG TBR WLD WRA	3303	- CHARLES BARBER HRB TBR
3478	- G W BALDWIN CLC HRB TBR	5041	- JAMIE BARBER ALT CLC HRB OLG REC RNG TBR WLD WRA
8811	- GUY BALDWIN' ALT CLC HRB OLG REC RNG TBR WLD WRA	4992	- RICHARD BARBER ALT CLC TBR WRA
9340	- G W DAVID BALDWIN. CLC	5892	- WILLIAM BARBIN ALT CLC HRB OLG REC RNG TBR WLD WRA
10701	- KRISTIANNA V ALT CLC TBR WRA	2673	- CHELSEA BARBOUR TBR
6147	- REBECCA BALDWIN ALT CLC TBR WRA	287	- DAVID EARCIAY ALT CLC OLG WRA
7938	- VIRGINIA BALDWIN ALT CLC ECN OLG RNG TBR VIS WRA	5641	- DOUG BARCIAY' ALT CLC HRB OLG REC RNG TBR TRL WLD WRA
8641	- G W BALDWIN ECN H2O HRB OLG REC RNG TBR TRL WLD	10634	- TOM & CATHY BARGER' CLC H2O HRB REC TBR VIS
7032	- BARBARA BALEY. ALT CLC TBR WRA	11264	- ILSE E BARHART' CLC ECN
2338	- PATTI BALL CLC	2715	- ROBERT BARISH ALT CLC DRT ECN RDS
650	- ROSLYN L. BALL. CLC FLE OLG RDS RNG TBR WRA	3594	- STEPHAN BARISTER ALT CLC ECN OLG RNG TBR VIS WRA
8254	- DIANA BALLASY; ALT CLC ECN GEN OLG RNG TBR VIS WRA	3905	- MARJARIE BARKER ALT CLC HRB OLG REC RNG TBR WLD WRA
10429	- KENT BALLASY CLC OLG TBR WRA	1858	- STEVE BARKER. TBR
3525	- JOAN BALLENC ALT CLC ECN HRB OLG REC TBR WLD WRA	10535	- JEREMY BARKHURST CLC GEN HRB TBR
5435	- JUDY BALLENTINE C	10135	- NANCY BARLAGE ALT CLC ECN OLG RNG TBR VIS WRA
1755	- LARRY BALLEW RNG }	10080	- RICHARD BARLAGE ALT CLC ECN OLG RNG TBR VIS WRA
11117	- LARRY LEW CLC } K TBR	6930	- LARRY BARLLY ALT CLC TBR WRA
7261	- BENITA T BALLEW ALT CLC TBR WRA	5207	- BILL BARLOW ALT CLC HRB OLG REC RNG TBR WLD WRA
7512	- MICHAEL BALRUH. ALT CLC } OLG RE RNG TBR WLD WRA	5084	- EUGENE E BARLOW ALT CLC ECN OLG RNG TBR VIS WRA
67	- BARBARA G. E V CLC TBR	4677	- WILLIAM BARNARD ALT CLC TBR WRA
8627	- GLORIA BAMC } HRB TBR	5302	- BRIAN BARNES ALT CLC HRB OLG REC RNG TBR WLD WRA
10869	- LUCWBANAD CLCHRB	3103	- JIM BARNES ALT ECN GEN
10835	- TOFFY BANAMAN. CLC ECN REC	9943	- LILLY BARNES CLC GEN HRB TBR
7217	- ERIC BANCH ALT CLC HRB OLG REC RNG TBR WLD WRA	11434	- PEGGY BARNES RDS
10054	- KEITH BANDIMERE ALT CLC ECN OLG RNG TBR VIS WRA	8685	- WILLIAM R BARNES CLC OLG WLD WRA
6894	- SANDY BANDIOMAR ALT CLC ECN OLG RNG TBR VIS WRA	8965	- JANETC BARNEIT CLCTBR
		6825	- MARLEEN BARNETT' ALT CLC
		742	- SHAROL BARNETT ECN GEN
		10344	- WILLIAM BARNEWITZ & JILL MESSIER CLC ECN TBR WLD
		5379	- BRENT BARNEWOLF ALT CLC ECN OLG RNG TBR VIS WRA

175	- ILSE E. BARNHART. CLC REC	5662	- KIMBRELY A BASS ALT CLC ECN OLG RNG
447	- ILSE E BARNHART. CLC H2O TBR WIN		TBR VIS WRA
4095	- ILSE E BARNHART. CLC REC TBR	6041	- GEORGE BASSO. ALT CLC ECN OLG RNG
920	- JOHN A BARNHAAT: CLC GEN HRB RDS RNG		TBR VIS WRA
	TBR TRL WIN	4296	- MICHELLE BASTELIER ALT CLC ECN OLG
5793	- WILLIAM BARNHAAT'ALT CLC HRB OLG REC		RNG TBR VIS WRA
	RNG TBR WLD WRA	9662	- BETTY BATES. ALT CLC HRB OLG REC RNG
2522	- ERIC BARNHILL' DRT TBR VIS WLD		TBR WLD WRA
2819	- EDGAR W. BARNHILL, JR : CLC FSH HRB TBR	8798	- BRUCE BATES. ALT CLC ECN OLG RNG TBR
3630	- VIRGINIA BARON ALT CLC		VIS WRA
4345	- GINA BARONI' ALT CLC H2O HRB OLG REC	10400	- C J BATES ALT CLC TBR WRA
	TBR WLD WRA	1309	- GAYLE BATES ALT CLC ECN HRB OLG REC
8715	- LORRAINE BARR' CLC H2O HRB TBR WLD		TBR VIS WLD
	WRA	1499	- JIM BATES ECN RNG TBR TRL
5330	- SHAYNE BARR ALT CLC HRB OLG REC RNG	105	- MRS D BATES. ALT CLC HRB RDS REC WRA
	TBR WLD WRA	8797	- TAYA BATES. ALT CLC ECN OLG RNG TBR
945	- PAT BARRENTINE. CLC OLG REC TBR		VIS WRA
3460	- MARGARETA BARRETT CLC FSH HRB TBR	391	- WYNDY BATES TBR
7934	- ROBIN BARRETT. ALT CLC ECN OLG RNG	7309	- MICHAEL B BATIMITS ALT CLC ECN HRB
	TBR VIS WRA		OLG REC RNG TER WLD WRA
10975	- KEITH BARRETT (PETITION) ALT CLC ECN	8353	- LUCILLE BATT CLC TBR
	FSH H2O HRB SNP TBR TRL WLD WRA	10196	- GILBERT BATTANZAR CLC
7426	- CATHERINE M. BARRI, ALT CLC HRB OLG	9909	- JANET BATTISTINI CLC HRB
	REC RNG TBR WLD WRA	8568	- BOOTIE BATTLE. CLC GEN OLG TBR WRA
2525	- HELEN C BARRIE. ECN GEN WRA	7660	- LA RAVIAN BATTLEO' CLC OLG TBR WRA
9530	- SUSAN BARRINGER' HRB TBR	12251	- MAXINE & FERDINAND BAUBEL. CLC
3552	- JILL BARRINGHAM CLC H2O HRB OLG TBR	8050	- RUSSEL A BAUCH ALT CLC HRB OLG TBR
	TRL VIS WRA		WLD WRA
8518	- YOLAUDA BARRIOS: CLC OLG TBR WRA	5833	- KAREN BAUCHARD. ALT CLC HRB OLG REC
2662	- FRANK BARRON: ECN TBR		RNG TBR WLD WRA
5189	- DIANA BARRY. ALT CLC ECN OLG RNG TBR	2651	- MR & MRS EARLBAUER CLC
	VIS WRA	1470	- KEN & MARILYN BAUGHMAN CLC HRB RDS
9138	- WESLEY J BARRY, PI ALT CLC ECN FLE		TBR WRA
	O HR LID OLG R REC FNA RNG SIA	1496	- KENT M BAUGHMAN CLC OLG
	R TRL VIS WIN WRA	12058	- MARILYN BAUGHMAN CLC HRB TBR WRA
9699	- TERRA BARSANT ALT CLC TBR WRA	11509	- BAUGLE. CLC DRT HRB
151	- MURIEL BARSELL CLC HRB TBR	10956	- DAVID BAUMAN. ALT CLC ECN FSH H2O HRB
3418	- MURIEL BARSELL TBR		SNP TBR TRL WLD WR A
11470	- MURIEL BARSELL' R	4633	- JENNIFER BAUMAN. CLC HRB RNG TBR
8024	- LINDA J BAF SH ALT CLC ECN OLG RNG TBR	8111	- M BAUMAN CLC
	VIS WRA	2678	- DAN BAUMAUS. CLC HRB TBR
8987	- MARGARET BARSON. REC RA	1533	- PHILIP BAUMEISTER CLC
3406	- PAUL BARTH. CLC ECN FAC HRB MIN PLN	11864	- PATRICIA BAUMER. CLC ECN H2O HRB TBR
	RNG TBR VIS		VIS
12038	- STEPHAN E E ALT TBR	6855	- SHELLI BAURNBACK ALT CLC H2O REC TBR
1159	- HARRY BARTHMAN FSH REC VIS WLD		WLD
8570	- JOHN BARTHO CLC OLG TBR WRA	561	- CANUTO B BAUTISTA CLC TBR
3380	- BAREARA BARTICK' R	6444	- SUSAN BAVO ALT CLC ECN OLG RNG TBR
3971	- MARY C BARTLETT J. CLC DRT ECN H2O		VIS WRA
	HRB L RIX TBR VIS WLD WRA	2032	- MATTHEW BAXTER ALT ECN GEN
4735	- MICHAEL BARTLETT' CLC HRB OLG	6199	- SCOTT R BAXTER ALT CLC
11012	- DARNELL BARTLETT' ALT CLC E N FSH H2O	5025	- RICHARD BAY CLC FLE HRB OLG VIS WRA
	HRB SNP TBR TRL WLD WRA	3660	- RICHARD A B CLC FLE HRB OLG RDS
4686	- ANN BARTNE. ALT CLC R IA		REC TBR WRA
2774	- KAREN & KURT BARTON I LC HRB RDS	7865	- RICHARD BAYAN ALT CLC DRT ECN OLG
	TRL VIS WLD WRA		RNG TBR VIS WRA
8098	- KAREN & KURT BARTON CLC H2O HRB REC	310	- JADA BAYER CLC HRB TBR
	TBR WRA	7342	- SHANON A BAYLAN CLC TBR WRA
11509	- L. BARTON CLC RT HRE	4091	- BRUCE J EAYLESS ALT HRB OLG REC TBR
10972	- SA BARTON ALT CLC ECN FSH H2O	5836	- MARGIE BAZAN ALT CLC HRB OLG REC RNG
	HRE S VIF TBI TRL WLD WRA		TBR WLD WRA
10935	- LORETA BASCHGRINI. CLC	9085	- SCOTT BEACH ALT CLC HRB OLG TBR WLD
5538	- CYNTHIA BASSO, LFC TBR		WRA
821	- JAMES & AL JENI: VSF ECN	5449	- BEVERLY BEAIDA ALT CLC ECN OLG RNG
10731	- BARBERA A BASS ALT CLC TBR WRA		TBR VIS WRA
3189	- DAN B B IN	6938	- STACY J BEAINE ALT CLC TBR WRA
814	- DON L B S TBI	3206	- BRENDA BEALN CLC OLG TBR WRA
3336	- JOHN B S LT CLC HRB OLG TBR WLD	3908	- BRENDA BEALEY ALT CLC ECN OLG RNG
	WRA		TBR VIS WRA

8088	- HEATHER BEAULT CLC TBR WRA	11124	- WILLOW BECKWITT. CLC DRT ECNTBR VIS
3255	- RICK BEALL CLCTBR	2582	- YAHI BECKWIT CLC REC TBR
10330	- DAYN BEALS ALT CLC ECN OLG RNG TBR VIS WRA	7889	- YAHI BECKWIT ALT CLC HRB OLG REC RNG TBR WLD WRA
6827	- JULIA BEAMAN ALT CLC ECN HRB OLG REC RNG TBR VIS WLD WRA	10251	- YAHI BECKWIT CLC ECN HRB TBR VIS WRA
5962	- DIANE BEAR ALT CLC HRB OLG REC RNG TBR WLD WRA	11261	- YAHI BECKWITT OLG TBR
3400	- RUFUS BEAR CLC TBR	686	- BARBARA BEDDOW CLC WRA
3444	- SOARING BEAR. CLC	11180	- SUE A BEEBE CLC GEN
6311	- BEAR CREEK ASSOC REC	1826	- EDWARD BEEDY, PHD CLC HST LND OWL RDS REC RNA RNG SNP TBR TRL WIN WLD WRA WSR
9077	- JUDITH BEARAENALT CLC TBR WRA	1963	- BRUCE BEELEY' ALT CLC HRB
3995	- R C BEARD ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	9904	- BRUCE BEELEY ALT CLC ECN H2O HRB OLG TBR TRL VIS WIN WLD WRA
1682	- GORDON K. BEATIE. TBR	3903	- JOYCE BEELEY' ALT CLC HRB OLG TBR WLD WRA
1390	- KENNETH BEATTY' ECN GEN TBR	1959	- KATHERINE BEELEY CLC HRB
10832	- TED & SUSAN BEAUCHAMP. CLC HRB	6648	- JENNIFER M BEEMAN CLC FSH HRB TBR WLD
3500	- SHARON BEAUDOIN CLC TBR	1478	- JEFF BEEMER CLC HRB
7599	- CALVIN HARRY BEAUDRIE ALT CLC ECN OLG RNG TBR VIS WRA	5505	- WENDY BEERS ALT CLC TBR WRA
7091	- STEPHEN BEAUDOIE ALT CLC ECN OLG RNG TBR VIS WRA	9877	- DR DAVID BEESLEY ALT CLC
5486	- WENDY BEAVERS. ALT CLC ECN OLG RNG TBR VIS WRA	1580	- EARL BEEVER, TBR VIS WRA
5966	- BRUCE BEBWYER ALT CLC HRB OLG REC RNG TBR WLD WRA	8149	- M BEGANT. ALT CLC GEN HRB OLG TBR WLD WRA
6887	- BERNADETTE BECHDALT ALT CLC HRB OLG REC RNG TBR WLD WRA	7819	- ALI BEHH. ALT CLC TBR WRA
8150	- LALENIA BECHERDITE. ALT CLC HRB OLG REC RNG TBR WLD WRA	3400	- CHARLES BEHR CLC TBR
8359	- LINDA BECHT. ALT CLC HRB OLG TBR WLD WRA	4661	- JOHN BEHR. ALT CLC REC TBR WRA
5347	- CHRISTOPHER BECK ALT CLC ECN OLG RNG TBR VIS WRA	987	- BEHREND & SON LOGGING HENRY L BEHREND' ECN GEN TBR
7241	- DAVE BECK ALT CLC ECN OLG RNG TBR VIS WRA	11591	- CYNTHIA J. BEINDT' ALT CLC HRB OLG REC TBR WRA
4627	- DIANE BECK. CLC ECN H2O HRB OLG TBR TRL VIS WLD WRA	9385	- S. BEL ALT CLC TBR WRA
5018	- GUDRUN BECK. CLC ECN HRB TBR VIS WRA	3771	- BARBARA BELAND' ALT CLC GEN HRB OLG TBR WLD WRA
7240	- KATHARINEE BECK. ALT CLC ECN OLG RNG TBR VIS WRA	3853	- BERNADINE BELASKI ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
5064	- PRISALLA BECK ALT CLC HRB OLG REC RNG TBR WLD WRA	2458	- MARY BELCHER ALT ECN GEN
5348	- ROSE BECK ALT CLC ECN OLG RNG TBR VIS WRA	4821	- MINDY BELDING ALT CLC HRB OLG REC RNG TBR WLD WRA
10943	- JEFFREY I BECK ALT CLC ECN HRB TBR WRA	4820	- E J. BELDINGER ALT CLC HRB OLG REC RNG TBR WLD WRA
4511	- MR & MRS BECKEMEYER RDSTR VIS WRA WSR	7296	- VALERIE BELFRY ALT CLC TBR WRA
1862	- BENJAMIN & SIMONE BECKER CLC ECN HRB WRA	5740	- MR & MRS CARREL BELK CLC TBR VIS
4211	- DENNIS BECKER CLC HRB TBR	8145	- LAUREN BELKNEYS CLC ECN HRB REC TBR VIS WRA
3587	- LUCY BECKER. ALT CLC HRB OLG REC RNG TBR WLD WRA	1817	- G DUANE BELL TBR
6291	- MILES BECKER CLC ECN OLG TBR WRA	6853	- JOHN G BELL CLCTBR
20500	- PALHE BECKER TRL	2077	- JOSEPH J BELL CLC ECN H2O HRB OLG RDS REC RNG TBR TRL VIS
6872	- ROBERT BECKER CLC H2O RNG TBR TRL VIS WRA	11262	- JOSEPH J. BELL. CLC ECN H2O HRB OLG RDS REC RNG TBR TRL VIS
11131	- ROBERT BECKER. CLC ECN FLE HRB REC RNG TBR VIS WRA	1347	- LINDA A BELL CLC FLE GEN HRB
1560	- ROWLAND BECKITT ECNTER	10538	- MIKE BELL' CLC GEN HRB TBR
1174	- KALE BECKWITT. CLC	4360	- PAT BELL' ALT CLC HRB OLG REC RNG TBR WLD WRA
2069	- KALE BECKWITT' OLG	295	- RAE BELL ALT CLC HRB
7964	- KALE BECKWITT ALT CLC TBR WRA	10516	- RICHARD BELL CLC ECN HRB TBR
8333	- KALE BECKWITT ALT CLC HRB OLG REC RNG TBR WLD WRA	3596	- TIM BELL ALT CLC HRB OLG REC RNG TBR WLD WRA
11112	- STEVE BECKWITT. CLC ECN HRB OLG REC RNG TBR	11021	- GARY BELL ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
		8501	- DEREK D BELLER CLC
		4131	- ROBERT BELLEZZA TBR
		8240	- CAITH ADELE BELLMER CLC H2O HRB REC TBR VIS
		8239	- E H BELLMER, JR CLC H2O HRB REC TBR VIS

4731	- C BELLOCCHIO ALT CLC ECN OLG RNG TBR VIS WRA	7270	MARTIN J BENNETT ALT CLC TBR WRA
4730	- EDWARD BELLOCCHIO ALT CLC ECN OLG RNG TBR VIS WRA	6102	SHELLY BENNETT ALT CLC TBR WRA
1774	- JACQUELINE BELLOU' CLC ECN HRB TBR VIS WRA	10220	STEVE BENNETT' ALT CLC TBR WRA
6999	- JACQUELINE BELLOW ALT CLC HRB OLG REC RNG TBR WLD WRA	1652	DR BENOIT CLC
7065	- JUDY BELTAUETTI ALT CLC HRB OLG REC RNG TBR WLD WRA	5999	TRISHA D BENOUD ALT CLC HRB OLG REC RNG TBR WLD WRA
6068	- GIONA BELTRINET ALT CLC ECN OLG RNG TBR VIS WRA	9778	CHARLES BENSE ALT CLC TBR WRA
8533	- DAVID BELTRAME ALT CLC ECN OLG RNG TBR VIS WRA	9777	HEIDI EENSE ALT CLC TER WRA
7254	- CATHERINE BELTRAMI' ALT CLC TBR WRA	10575	B BENSING CLC HRB
812	- RILEY BELTY, ECN TBR	10576	K BENSING, CLC
3890	- CARLE EEMPS ALT CLC HRB OLG REC RNG TBR WLD WRA	8242	BARBARA BENSON CLC
10674	- EILLEN BENBE, ALT CLC HRB OLG REC RNG TBR WLD WRA	10336	HELEN W BENSON' ALT CLC ECN OLG RNG TBR VIS WRA
435	- CHUCK BENDER GEN OWL TBR	8336	MOLLY BENSON ALT CLC HRB OLG REC RNG TBR WLD WRA
6208	- CLAUDIA BENDER, ALT CLC ECN OLG RNG TBR VIS WRA	8144	RAYMOND BENSON, CLC
5200	- DAMAN BENDER ALT CLC HRB OLG REC RNG TBR WLD WRA	291	SCOTT BENT, CLC HRB RDS TBR
5333	- KEN BENDER ALT CLC HRB OLG REC RNG TBR WLD WRA	5993	ROBERT BENTE ALT CLC HRB OLG REC RNG TBR WLD WRA
4504	- CYNTHIA J BENDT, ALT CLC HRB OLG TBR WLD WRA	3614	GREG BENTHIN GEN TBR
9324	- (FAMILY) BENDZ CLC H2O HRB REC TBR VIS	20500	R BENTON TRL
8455	- ROB BENE, ALT CLC HRB OLG REC RNG TBR WLD WRA	5426	- ROBERT BENTON CLC ECN TBR
8519	- LYNN BENEDICT' AIR CLC HRB OLG TBR VIS WLD WRA	10514	BARBARA R BENTY CLC ECN HRB RDS REC TER TRL
10142	- LELA BENETLY, ALT CLC ECN OLG RNG TBR VIS WRA	8826	WILL BENWARE CLC ECN REC TBR
3586	- CHRIS BENG ALT CLC HRB OLG REC RNG TBR WLD WRA	7742	RICHARD BENZAN ALT CLC DRT HRB OLG REC RNG TBR WLD WRA
2295	- DENNIS BENJAMIN TRL	10307	JAMES P BERARDI, ALT CLC ECN OLG RNG TBR VIS WRA
9425	- TOM BENJAMIN, ALT CLC ECN OLG RNG TBR VIS WRA	2949	BOB BERG, WRA
10678	- MARTIN BENKLES ALT CLC ECN OLG RNG TER VIS WRA	3751	- COLLEEN BERG, ALT CLC HRB OLG REC RNG TBR WLD WRA
1344	- KAREN BENNA' CLC	6687	- JOHN BERG ALT CLC ECN OLG RNG TBR VIS WRA
8115	- CARSON BENNER ALT CLC ECN HRB OLG RNG TBR TRL VIS WIN WRA	6688	- VELMA BERG, ALT CLC ECN OLG RNG TBR VIS WRA
8114	- SHAWN BENNER: ALT CLC HRB OLG TBR TRL WLD WRA	4973	- JOHN BERGEN' ALT CLC HRB OLG TER WLD WRA
8113	- STEVE BENNER, ALT CLC ECN HRB OLG RNG TBR TRL VIS WIN WRA	185	BRUCE BERGER ALT CLC GEN
1130	- ALEX BENNETT' CLC TBR	8511	SARAH BERGER, CLC GEN OLG TER WRA
7523	- ANDREW BENNETT ALT CLC HRE OLG REC RNG TBR WLD WRA	1308	VIOLA & PAULINA BERGGERM' TBR
5755	- CHRISTINA R BENNETT, ALT CLC ECN OLG RNG TBR VIS WRA	5290	JUDITH BERGMAN, ALT CLC HRB OLG REC RNG TBR WLD WRA
11702	- CHRISTINE BENNETT, ALT CLC HRB REC TBR WLD WRA	8296	RONNY BERGMAN' CLC OLG TBR WLD WRA
2374	- CHRISTINE J BENNE ** ALT CLC HRB TBR	4064	ROLAND BERGTHOLD, CLC H2O HRB REC TBR VIS WLD
5759	- HARRY BENNETT ALT CLC HRB OLG REC RNG TBR WLD WRA	5699	- W BERTHESNT ALT CLC HRB OLG REC RNG TBR WLD WRA
647	- J I. BENNE ** TBR	10215	- I S. BERINGER ALT CLC TBR WRA
10222	- KATHY BENNETT ALT CLC TBR WRA	7102	- ROBIN B ALT CLC HRB OLG REC RNG TBR WLD WRA
5757	- KEVIN M. BENNE ** ALT CLC ECN OLG RNG TBR VIS WRA	1722	ROB M BERKELEY CLC ECN HRB TER VIS WRA
		910	BERKELE ' ROD & GUN CLUB BURDELL L WERNER ALT
		496	BERKELY ROD & GUN CLUB ALT
		152	- FRANK B ALT CLC HRB TBR
		4993	DOLORES BERKHIMER ALT CLC ECN OLG RNG TBR VIS WRA
		4231	ERICA BERKHIMER ALT CLC ECN GEN OLG RNG TBR VIS WRA
		4444	A K BERKIMER ALT CLC ECN OLG RNG TBR VIS WRA
		5595	LEIF BERKSON ALT CLC HRB OLG REC RNG TBR WLD WRA
		7010	LEIF BERK' ALT CLC TBR WRA
		5952	- HAROLD A B, JR ALT CLC ECN OLG RNG TBR VIS WRA

8895	▪ ARTHUR BERLOWITZ ALT CLC ECN OLG RNG TBR VIS WRA	10671	- SUZANNE BETTS ALT CLC ECN OLG RNG TBR VIS WRA
1661	- BARBARA BERMAN CLC RDS WSR	10989	▪ ROBERTA J BETTS, ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
11052	- ALYSON E BERMAN ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	12013	- ELKE L BETZ-SCHMIDT CLC TBR
7699	- DAN BERNADETT TBR	6589	- CHRISTINE L BEVAN ALT CLC FLE HRB TRL WRA
2277	- BEAR BERNHAGEN AIR ALT CLC HRB OLG REC TBR WLD WRA	3176	- ELMER E BEVAN CLC GEN HRB RDS TBR
2709	- EVE BERNHAGEN ALT CLC HRB OLG RDS TBR	3171	- FRANCES BEVAN ALT CLC HRB
2728	- JEFF BERNHAGEN ALT CLC HRB OLG RDS TBR	12078	- FRANCES BEVAN CLC HRB
2933	- ROBERT BERNHAGEN AIR ALT CLC HRB OLG REC TBR WLD WRA	5562	- LEAH BEVARGER ALT CLC HRB OLG REC RNG TBR WLD WRA
2779	- SANDRA BERNHAGEN AIR ALT CLC HRB OLG REC TBR WLD WRA	9163	▪ NANCY BEW ALT CLC ECN OLG RNG TER VIS WRA
2452	- SCOUT LOUISE BERNHAGEN CLC HRB OLG RDS TBR	3424	- MR & MRS EDWARD BEYELER CLC HRB OLG TBR
7760	- LUCIEN BERNHARD CLC	4443	- MARK BNEERS TBR
7753	- LOUIS BERNSTEIN ALT	8580	- JESSICA S BEYMEN CLC ECN HRB REC TER VIS WRA
a55	- SUSAN BERNSTEIN CLC HRB TBR WRA	4480	- MR & MRS. BNMER ALT CLC ECN OLG REC RNG TBR VIS WRA
2008	- A J BERRETT ALT ECN GEN	5663	▪ ARIA M. BIANCO ALT CLC ECN OLG RNG TBR VIS WRA
2187	- ADAM BERRY. CLC	10278	- ROSANE J BICEGO ALT CLC GEN TBR WRA
5492	- GAIL BERRY ALT CLC ECN HRB HST OLG RNG TBR VIS WRA	3813	- ANNE BICKFORD ALT CLC HRB OLG TBR WLD WRA
11087	- KRISTIN BERRY. AIR CLC ECN GEN H2O REC RNG TBR VIS	8194	- BROOKS BICRHEMPEEL ALT CLC HRB OLG REC RNG TBR WLD WRA
96	- MR & MRS ROBERT G BERRY GEN REC TBR WLD	1803	- BESSIE E BIDDLE ALT CLC DRT HRB WRA
9579	- FRED & JOANNE BERTERO CLC FSH REC TBR	7575	- WONNE I BIDQS ALT CLC ECN OLG RNG TBR VIS WRA
6255	- BOB BERTHEW. ALT CLC LND TBR WRA	4502	- BETH BIEDERMAN CLC TBR
5523	- MICHELLE BERTNICK. ALT CLC TBR WRA	11726	- BETH BIEDERMAN CLC OLG TBR
3194	- ARTHUR BERTOLINI ECN	3275	▪ BOB BIEGERT CLC ECN
5973	- JANET W BERTONCINI ALT CLC HRB OLG REC RNG TBR WLD WRA	9776	▪ ROBERTA BIEN ALT CLC TBR WRA
10565	- JULIE BERTRAM CLC GEN HRB TBR	6853	- FRANKLIN N BIEVILLE CLC TBR
2044	- JAMIE BERUBAGE AIR ALT CLC HRB OLG REC TBR WLD WRA	3138	- AARON BIHLMAN CLC
5927	- CHERYL & JOHN BERUTTI CLC GEN LND RDS	3150	▪ M BIJAN CLCHR
10614	- DAN BERZ CLC H2O HRB REC TBR VIS	9903	- JON BIJOLI CLC OLG TBR WRA
4102	- DANELLE BESANA ALT CLC HRB OLG REC RNG TBR WLD WRA	1646	- P BILBAO CLC RDS WSR
8479	- OWEN E & BETTY J. BESS ALT CLC RDS	4541	- JOHN BILHEIMER ALT CLC H2O RDS TBR WLD WRA
10604	- LORETTA BESSETTE CLC H2O HRB REC TBR VIS	11291	- JOHN BILHEIMER ALT CLC RDS TBR
1658	- JIM BEST. CLC WSR	3980	- MICHAEL BILLE CLC ECN HRB TBR
10610	- NIKKI BEST. CLC H2O HRB REC TBR VIS	388	- CAMERON BILLECI TBR
3663	- BRENT BESTGEN. AIR ALT CLC HRB OLG REC TBR WLD WRA	3293	- CAMERON BILLECI CLC TBR
4961	▪ ERIN BESTGEN AIR ALT CLC HRB OLG REC TBR WLD WRA	3846	- CAMERON BILLECI CLC TBR
3325	- JUDY BESTGEN. AIR ALT CLC HRB OLG REC TBR WLD WRA	6150	- ROBERT D BILLINGS CLC FLE GEN HRB TBR
6852	- MARLIES DEWOODY BESTPITCH CLC TBR	4415	- TY BILLINGS ECNTBR
1309	- VICTOR BETBODAL ALT CLC ECN HRB OLG REC TBR VIS WLD	6921	- JOHN J BILLINGTON ALT CLC TBR WRA
2472	- LEO F BETTI, ALT ECN GEN	5322	- JEANETTE BILODEAU ALT CLC HRB OLG REC RNG TBR WLD WRA
2473	- STELLA J BETTI, ALT ECN GEN	3517	- ELEANOR BINDER GEN
8914	- JANET BETTINGER ALT CLC ECN OLG RNG TBR VIS WRA	11782	▪ ELEANORC BINDER
7206	- KAREN BETTINGER. ALT CLC ECN OLG RNG TBR VIS WRA	4089	▪ CAROL BINGHAM. CLC ECN RDS REC TBR TRL WIN WSR
7860	- DAVID & DANIEL BETTS ALT CLC H2O HRB OLG REC RNG TBR VIS WLD WRA	7136	- DAVID BINGHAM ALT CLC FLE HRB OLG REC RNG TBR WLD WRA
7940	- SUZ F S ALT CLC ECN C REC RNG TBR VIS WRA	8309	- MARGARET BIOM ALT CLC HRB OLG REC RNG TBR WLD WRA
		3500	- MAX BIONES. CLC TBR
		8555	- MELISSE M BIRCH ALT CLC HRB OLG REC RNG TBR WLD WRA
		3500	MARCIA BIRNEY CLC TBR
		6185	JIM BIRT CLC HRB LND OLG RNG TBR TRL VIS
		1873	ALLAN BISBY GEN
		10452	DANIEL M BISHOP ALT CLC HRB OLG TBR WLD WRA

4288	- DAVID A. BISHOP: ECN	5296	- SANDRA BLAKE: ALT CLC ECN OLG RNG TBR VIS WRA
10459	- PATRICK BISHOP: ALT CLC TBR WRA	10213	- CLAYTON BLAKELEY: ALT CLC TBR WRA
10450	- ROBERT W. BISHOP: ALT CLC HRB OLG TBR WLD WRA	4066	- MARGUERITE BLANCHARD: ALT CLC TBR WRA
10451	- ROBERTA ANN BISHOP: ALT CLC HRB OLG TBR WLD WRA	4665	- RICHARD BLANCHARD: ALT CLC TBR WRA
4900	- JON BISIAUX: ALT CLC HRB OLG REC RNG TBR WLD WRA	10851	- SELMA BLANCHARD: ALT CLC TBR WRA
8877	- BRUCE S. BISSELL: CLC H2O HRB REC TBR VIS	5902	- KATHARINE J. BLANK: ALT CLC ECN OLG RNG TBR VIS WRA
1309	- ALLEN BITAR: ALT CLC ECN HRB OLG REC TBR VIS WLD	10249	- FRED BLATT, ECOLOGIST: ALT CLC TBR WRA
5303	- RICH BITLAKER: ALT CLC HRB OLG REC RNG TBR WLD WRA	6251	- LEON BLAUSTEIN: ALT CLC TBR WRA
1692	- DR. & MRS. WILLIAM E BITTNER: CLC H2O HRB TBR	3167	- GEORGE M. BLEEKMAN: CLC ECN HRB RDS TBR
3597	- BOB BIVALETY: ALT CLC HRB OLG REC RNG TBR WLD WRA	7295	- RONALD L. BLEGN: ALT CLC TBR WRA
1587	- CAROLYN BNENS: ALT CLC HRB WRA	744	- QUITA BLENINS: GEN TBR
10119	- J. SHAWNA WORKLUND: ALT CLC ECN OLG RNG TBR VIS WRA	9583	- CANARY BLESSE: CLC HRB TBR WLD
6406	- TAMMY BJORKLUND: ALT CLC ECN OLG RNG TBR VIS WLD WRA	7510	- CELESTE BLESSING: ALT CLC HRB OLG REC RNG TBR WLD WRA
11290	- PHILIP A. WORKMAN: TBR	99	- RITA BLESSING: CLC TBR
9183	- BARBARA BLABON: ALT CLC ECN OLG RNG TBR VIS WRA	6104	- PAT BLEVINS: ALT CLC TBR WRA
6267	- ALTA DYER BLACK: ALT CLC GEN TBR WRA	1921	- BRUCE BLEVLEY: ALT ECN GEN
5864	- DENNIS BLACK: ALT CLC HRB OLG REC RNG TBR WLD WRA	7992	- WILLIAM BLEY: ALT CLC HRB OLG REC RNG TBR WLD WRA
6697	- GARY BLACK: ALT CLC HRB OLG REC RNG TBR WLD WRA	5100	- JACOB BLICKMALOFF: ALT CLC HRB OLG REC RNG TBR WLD WRA
6486	- GORDON M. BLACK: CLC TBR WLD	4247	- DANIEL BLISS: ALT CLC HRB OLG REC RNG TBR WLD WRA
11191	- MARGARET E. BLACK: ALT CLC ECN OLG RNG TBR VIS WRA	1938	- EVA BLISS: TBR
6943	- MARY BLACK: ALT CLC TBR WRA	3438	- VIRGINIA BLISS: ALT CLC HRB REC TBR
3783	- PATRICIA BLACK: ALT CLC GEN TBR	1991	- WALLY BLISS: ALT ECN GEN
847	- PATRICIA J. BLACK: ALT CLC OLG	1091	- MR. & MRS. EVERETT BLIZZARD: CLC TBR
9343	- RANDOLPH BLACK: CLC OLG TBR WRA	831	- DAVID C. BLOCH & SPERANZA AVRAM: CLC REC TRL
627	- BLACK FOREST SNOWSHOE CO JIM CODY: ALT	3013	- HUGO BLOCK AIR: ALT CLC HRB OLG REC TBR WLD WRA
2660	- MARGARET BLACK-SMITH: CLC GEN RNG TBR TRL WRA	2735	- JOHN W. BLODGER: GEN HRB TBR
3914	- BARRY BLACKBURN: CLC ECN HRB TBR	3397	- PAULA BLOWER: ALT CLC GEN TRL VIS
3556	- CAROL BLACKBURN: CLC OLG TBR WRA	11773	- PAULA BLODGER: ALT CLC REC TRL
9330	- STEVE BLACKBURN: CLC H2O HRB REC TBR VIS	1822	- SHARON BLODGER: CLC ECN
1571	- MARA BLACKWELL: CLC REC TBR	11669	- SHARON BLODGER: ECN WRA
5012	- JEFFERY BLADE: CLC HRB TBR TRL WRA WSR	8339	- SIDD BLOLA: ALT CLC ECN OLG RNG TBR VIS WRA
11025	- ISABEL BLAGBORNE: ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD	5597	- BILL BLOO: ALT CLC HRB OLG REC RNG TBR WLD WRA
WRA		10255	- KIMBERLY K. BLOOD: ALT CLC TBR WRA
1309	- EDMOND J. BLAGEON: ALT CLC ECN HRB OLG REC TBR VIS WLD	3406	- I. BUKUM BLOOM: CLC ECN FAC HRB MIN PLN RNG TBR VIS
1693	- KARL & GAIL BLAGG: ECN TBR	4723	- IBUKUN BLOOM: CLC
4278	- PHILIP BLAGG: CLC HRB REC TBR WSR	6644	- JERRY BLOOM: ALT CLC ECN HRB
12157	- ELAYNE L. BLAIR: CLC	10866	- MICHAEL BLOOMQUIST: TBR
7192	- JOHN R. BLAIR: ALT CLC TBR WRA	4605	- J.R. BLOUCHARD: ALT CLC TBR TRL WRA
5520	- SUSAN BLAIR: ALT CLC TBR WRA	4206	- BOB BLOUGH: CLC HRB TBR WRA
3406	- BEN BLAKE: CLC ECN FAC HRB MIN PLN RNG TBR VIS	8223	- STEVE BLUM: ALT CLC HRB OLG REC RNG TBR WLD WRA
4720	- BENBLAKECLC	9301	- THEODORE H. BLUM: GEN
5126	- BRIAN BLAKE: ALT CLC HRB OLG REC RNG TBR WLD WRA	10377	- MARIANNE BOAINE: CLC FLE TBR
5297	- DAVID BLAKE: ALT CLC ECN OLG RNG TBR VIS WRA	1561	- BRENDA BOATRIGT: TBR
10675	- JOHN S. BLAKE: ALT CLC HRB OLG REC RNG TBR WLD WRA	1566	- GREG BOATRIGT: TBR
		2690	- DEBORAH BOBBITT-HUDEK: ALT CLC HRB OLG TBR WLD WRA
		7932	- SAMUEL BOBIS: ALT CLC ECN OLG RNG TBR VIS WRA
		9051	- GERLYN BOCH: ALT CLC HRB OLG REC RNG TBR WLD WRA
		6898	- CHRISTOPHER BOCK: ALT CLC HRB OLG REC RNG TBR WLD WRA
		6407	- JEFF BODDE: ALT CLC ECN HRB OLG RNG TBR VIS WRA

5294	- ODETTE BODDE ALT CLC ECN OLG RNG TBR VIS WRA	4658	- M.A. BOLNSINK ALT CLC TBR WRA
684	- USA BODEUR ALT CLC HRB TBR WRA	4535	- EDWARD BOLSON ALT CLC HRB OLG TBR WLD WRA
10365	- BODHI, TBR	6103	- ROBIN BOLSTEN ALT CLC TBR WRA
7906	- ADAM BODINE ALT CLC HRB OLG REC TBR WLD WRA	7679	- MARGARET BOLT CLC OLG TBR WRA
3221	- DAVE EODINE' CLC OLG TBR WRA	2607	- HARRY BOLTON CLC TBR
2644	- JANE BODINE. A T CLC GEN HRB OLG TBR WLD WRA	412	- USA BOLTON CLC HRB TBR WRA
3196	- LISA BODINE ALT CLC GEN HRB OLG TBR WRA	10609	- SHERYL BOLTON CLC H2O HRB REC TBR VIS
12240	- LISA BODINE ALT CLC HRB OLG TBR WLD WRA	9353	- SONYA BOLUS ALT CLC HRB OLG REC RNG TBR WLD WRA
6458	- ALEX BODISCO. TBR	7682	- SETH BOMSE. CLC GEN OLG TBR WRA
10945	- GREGORY BOEHM: ALT CLC ECN HRB TBR WRA	1785	- H BONAIME CLC
9960	- E W E BOER. CLC GEN HRB TBR	1283	- DOUGLASR BOND TBR
3819	- ADRIAAN BOER' CLC	4963	- JOANNA BOND ALT CLC HRB OLG TBR WLD WRA
3819	- JOANNA BOER' CLC	4061	- MR. & MRS BOND' ALT CLC HRB OLG REC TBR VIS WLD WRA
2657	- JOHN BOESEL' ALT CLC ECN HRB OLG TBR WLD WRA	6857	- MR & MRS CARROLL BOND. CLC DRT HRB WLD
228	- FORRESTR BOGARD CLC HRB RNG TBR	8284	- PETER BONDEROP' ALT CLC ECN OLG REC RNG TBR VIS WRA
4881	- LAUREN BOGE ALT CLC HRB OLG REC RNG TBR WLD WRA	1785	- MARYBONDUN CLC
4490	- SUSAN ELLEN BOGEN. ALT CLC H2O HRB PLN RDS SIA TBR TRL VIS WRA	4795	- CHRIS BONELLI ALT CLC HRB OLG TBR WLD WRA
8964	- GREG BOGHASSIAN DRT ECN HRB TBR WLD WRA	1126	- SHARON E BONITA ALT
6853	- BRAD BOGOVICH CLC TBR	8806	- BOB. PEG, TODD, & SCARI BONNER CLC HRB REC RNG WLD
2215	- BOHEMIA, INC RICHARD COOMLER ECN TBR	11560	- MARILYN BONNER CLC DRT WLD
11134	- BOHEMIA, INC PAUL DERROCHERS ECN GEN H2O LND REC SIA TBR TRL WRA	2674	- ROAN BONNER CLC TBR
9505	- BOHEMIA, INC PAUL DESROCHERS CLC ECN TBR	10818	- ROBERT K. BONNER CLC GEN HRB TBR VIS WLD
944	- BOHEMIA, INC GAYLE A. HESCOCK' GEN TBR	9192	- DAN BOOKER ALT CLC ECN OLG RNG TBR VIS WRA
10836	- BOHEMIA, INC LARRY RIEGER. CLC ECN REC TBR	9176	- RAE BOOKER. ALT CLC ECN OLG RNG TBR VIS WRA
11113	- BOHEMIA, INC LARRY RIEGER: ECN GEN OWL TBR VIS	6340	- CLAUDE BOOLY CLC ECN HRB LND RDS RNG TBR
8008	- BOHEMIA, ; RICHARD D TINNEY, EXECUTIVE VP. C DRT GEN H2O LND REC RNA ING SIA T TRL VIS WLD IA	1308	- BESSIE BOONE TBR
9036	- G BOHM' 'C 93 OLG F RA TBR D WRA	10437	- BESSIE BOONE CLC H2O HRB REC TBR VIS
1719	- SYLVIA BOHM. CLC ECN HRB TBR VIS WRA	5245	- JAMES BOONE ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
1716	- G BOHN' CLC ECN HRE 3 VIS W	6798	- LOURETTA EOONE ALT CLC HRB OLG REC RNG TBR WLD WRA
9280	- IA JHN. C EC N FLE HRB 7) RDS REC R WIN	767	- LARRY E BOOT TBR
10149	- WILLI F JH ALT CLC ECN OLG RNG TBR VIS WRA	176	- ELMER BOOTH. ALT CLC HRB RNG TBR WRA
2884	- BOISE CASCADE JAMES V WEATHERS OLG RNG TBR	2805	- GERALD R BOOTH CLC REC WRA
6990	- PAM BOISEN: ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	11002	- MARIA L. BOOTH. ALT CLC ECN FSH H2O HRB SNP TER TRL WLD WRA
8123	- DAVID BOLD' ' HRB OLG TBR WLD WRA	4828	- ALICIA BOOZE ALT CLC ECN OLG RNG TBR VIS WRA
8559	- JUDONDE O BOLDEN CLC HRE OLG TBR WRA	7013	- JOATHAN BORAH ALT CLC TBR WRA
5466	- NEDRA E ALT CLC ECN OLG RNG TBR VIS WRA	2029	- SHARON BORBA ALT ECN GEN
5013	- PATRICIA BOLDS. CLC ECN HRB TBR VIS WRA	9148	- HOWARD B BOREL ALT CLC HRB OLG REC RNG TBR WLD WRA
205	- KATHY BOLER ALT CLC REC RNG TBR	7329	- SALLY R BORGER ALT CLC HRB OLG TBR WLD WRA
11197	- BOLHI. ALT CLC ECN OLG RNG TBR VIS WRA	6099	- TRACY BORHANI: ALT CLC H2O HRB OLG TBR TRL VIS WLD WRA
1166	- CHARLOTTE BOLINGER CLC ECN HRB REC TBR	10552	- MELISSA BORKGREN CLC GEN HRB TBR
3546	- JANA BOLLENGER. ALT CLC HRB OLG REC TBR WLD WRA	10237	- LINDA C BORLA ALT CLC TER WRA
		1378	- ADAM BORNSTEIN ALT CLC ECN RECTRL VIS
		11251	- DEBBI BORNSTEIN WRA
		1228	- DEBBIE BORNSTEIN ALT CLC HRB OLG RDS REC TBR W W WRA

587	RUTH EORNSTEIN. TBR VIS WLD	5033	- THELMA EOWEN ALT CLC HRE OLG REC
12179	RUTH BORNSTEIN.		RNG TBR WLD WRA
5913	- BUFORD EOROMOM' ALT CLC HRB OLG	10999	- CHRIS BOWEN ALT CLC ECN FSH H2O HRB
	REC RNG TBR WLD WRA		SNP TBR TRL WLD WRA
4295	- JS BORRUM ALT CLC GEN H2O HRB OLG	6471	- KAREN BOWER CLC ECN HRE TER VIS WRA
	REC RNG TBR TRL VIS WLD WRA	9264	- CAROLEOWERS CLC
2979	- LAURIE EORTHWICK. ALT CLC TER WSR	8147	- JOHN BOWERS ALT CLC HRB OLG REC RNG
3918	- LAURIE BORTHWICK; ALT CLC RDS TBR		TBR WLD WRA
10519	- SHAWN BORTHY CLC GEN HRE TER	9762	- JOHN BOWERS ALT CLC TBR WRA
e428	- M J BOSCUCCI ALT CLC HRE OLG TBR WLD	4704	- RAYNA BOWERY CLC
	WRA	10072	- KATHLEEN BOWES. ALT CLC ECN OLG RNG
3515	- MARK BOSKOVICH CLC HRB OLG RDS RNG		TER VIS WRA
	WLD	10133	- MAVOURNEEN EOWES ALT CLC ECN OLG
9917	- BERDIL EOSMA CLC GEN HRB TER		RNG TER VIS WRA
1464	- RALPH BOSS RDS TER	810	- DALE BOWMAN ALT GEN TBR
7009	- PAUL M H BOSSANT ALT CLC TER WRA	2864	- DAVID T BOWMAN CLC FSH HRB RDS REC
6508	- PAUL M H BOSSANT ALT CLC HRB OLG REC	5764	- DAVID T BOWMAN ALT CLC ECN OLG RNG
	RNG TER WLD WRA		TBR VIS WRA
3466	- BRYAN BOSSY ALT CLC ECN HRB TBR	3095	- J BOWMAN. ALT ECN GEN
11082	- CRAV LT IN RDS F	573	- JUDITH BOWMAN CLC HRB
	TBR T WLD	3395	- RICHARD BOWMAN ALT CLC HRB OLG TBR
7601	- EM J BOST ALT CLC TER WRA		WLD WRA
8361	- JOYCE BOSTICK ALT CLC HRB OLG TBR	8678	- ROBERT L BOWMAN ALT CLC ECN OLG TBR
	WLD WRA		VIS WRA
6949	- SARA A BOSWELL ALT CLC TBR WRA	4477	- BRUCE BOYD CLC HRB TER VIS WRA
3049	- D WILLIAM BOSWORTH CLC TER	6000	- DANA BOYD ALT CLC HRB OLG REC RNG
9104	- ELIZABETH BOTCHIS ALT CLC ECN OLG RNG		TER WLD WRA
	TBR VIS WRA	5069	- GEORGE E BOYD ALT CLC HRE OLG REC
9360	- CHRIST BOTOWN ALT CLC HRB OLG REC		RNG TER WLD WRA
	RNG TBR WLD WRA	3500	- JOHN BOYD CLC TBR
5816	- ELIT BOTTKELL ALT CLC HRB OLG REC RNG	9389	- KAREN BOYD ALT CLC TBR WRA
	TBR WLD WRA	8335	- MICHAEL BOYD ALT CLC HRB OLG REC
6570	- MR & MRS. EUGENE J. BOTT\$ CLC HRE		RNG TER WLD WRA
1361	- DARRYL BOUCHARD ALT CLC DRT FSH H2O	11527	- MONTY BOYD CLC HRB WRA
1359	- KAREN KNOX BOUCHARD. CLC ECN HRB	3092	- SANDY BOYD. ALT ECN GEN
	OLG TBR	2180	- MARK EOYDSTON GEN H2O HRE OLG RNG
7425	- KAREN KNOX BOUCHARD ALT CLC HRE OLG		TER TRL VIS WRA
	REC RNG TBR WLD WRA	908	- RICHARD EOYLAN. CLC TBR
5894	- DARRYL BOUCHARD ALT CLC HRB OLG REC	6060	- MICHAEL EOYLE ALT CLC REC TER WIN
	RNG TER WLD WRA		WRA
10651	- TED BOUCHER ALT CLC ECN OLG RNG TBR	10067	- SHIRLEY EOYLES ALT CLC ECN OLG RNG
	VIS WRA		TER VIS WRA
6188	- GARY BOUDREAUX ALT CLC HRB OLG REC	9443	- DON BOZO ALT CLC ECN OLG RNG TER
	TBR WLD WRA		VIS WRA
3647	- JOHN A. BOUELL ALT CLC TER WRA	9442	- LINDA BOZZO ALT CLC ECN OLG RNG TBR
2364	- MRS WILLIAM C BOUETT CLC ECN OLG		VIS WRA
	TER WRA	3396	- LEN BRACKETT CLC ECN OLG PLNTBR
5406	- BOB & AIDA BOUGHTON CLC H2O HRE REC	6806	- STEVEN BRACKETT. ALT CLC ECN OLG RNG
	TER VIS		TBR VIS WRA
8482	- GALE E EOULTON ALT CLC HRB OLG REC	8890	- MERIAN K ERACKNEY ALT CLC HRB OLG
	RNG TER WLD WRA		REC TER VIS WLD WRA
4547	- JACK BOULWARE ALT CLC HRE TBR	7051	- MICHAEL ERACKNEY ALT CLC GEN HRB OLG
113	- DAVID BOUQUIN ALT CLC H2O RDS RNG TBR		REC RNG TER WLD WRA
	WLD	7888	- MICHAEL ERACKNEY ALT CLC HRB OLG REC
9938	- NOEL EOUSMA CLC GEN HRB TER		RNG TBR WLD WRA
9617	- ELIZABETH BOUVEN ALT CLC TBR WRA	11268	- MICHAEL ERACKNEY CLC ECN HRE TBR
2739	- STEPHANIE & ROBERT BOVAIRD. ALT CLC	9651	- JULIE BRADFORD ALT CLC REC TBR WRA
	HRE OLG REC TER WLD WRA	9650	- RICHARD BRADFORD ALT CLC TBR WRA
7181	- FREDENCA\$ BOWALT ALT CLC TBR WRA	2483	- R D & M E BRADISH CLC TBR
4159	- FREDERICA BOWCUTT CLC ECN TER WRA	3500	- JOYCE BRADLEY CLC TBR
5410	- MARIE BOWDEN; TRL WIN WRA	3185	- LAURA BRADLEY CLC TBR
2038	- G L EOWEN ALT ECN GEN	191	- THOMAS GEOFFREY BRADLEY ALT CLC ECN
5034	- JAMES EOWEN ALT CLC HRB OLG REC RNG		HRB RDS
	TBR WLD WRA	10946	- MARK BRADLEY ALT CLC ECN HRB TBR WRA
5130	- JODY BOWEN ALT CLC HRB OLG REC RNG	10395	- JAMES BRADOCK. CLC REC
	TBR WLD WRA	11814	- ELIZABETH ERADSHAW CLC HRE
4562	- LINDSAY EOWEN CLC RDS TBR	9188	- HOMER EFLADY ALT CLC ECN OLG RNG TBR
5969	- RONALD A EOWEN ALT CLC HRB OLG REC		VIS WRA
	RNG TER WLD WRA		

5936	- JOHN BRADY CLC GEN	9999	- MICHAEL BRENT. ALT CLC TBR WRA
6324	- KATHY BRADY ALT CLC HRB OLG REC TBR WLD WRA	6853	- WINIFRED BRESHEARS CLC TBR
1919	- TODD BRADY ALT ECN GEN	5279	- JEFF BRESSLER ALT CLC ECN OLG RNG TBR VIS WRA
1925	- TRACIE BRADY ALT ECN GEN	5686	- JAY BRETT ALT CLC HRB OLG REC RNG TBR WLD WRA
2858	- GLORIA S BRAGIA CLCTBR	6397	- MRS RAY BRETT ALT CLC HRB OLG REC RNG TBR WLD WRA
52-21	- LORI BRAHAM, ALT CLC HRB OLG REC RNG TBR WLD WRA	10380	- DIANE BREWER ECNTBR
7265	- AMY BRAITHWAITE ALT CLC TBR WRA	6764	- EARL BREWER ALT CLC HRB OLG REC RNG TBR WLD WRA
4210	- JIM BRAKE & VICKI SHAW. CLC OLG HEC TBR	10104	- JANET BREWER ALT CLC ECN OLG RNG TBR VIS WRA
8052	- ELIZABETH R BRAMBLE ALT CLC TBR WRA	6765	- SALLY BREWER ALT CLC HRB OLG REC RNG TBR WLD WRA
2500	- ELFRIEDA BRANCH CLC ECN HRB RDS TBR	161	- STEPHEN BREWER & MARIE SANDERS CLC HRB RDS TBR
4943	- JOHN BRANDAN ALT CLC ECN OLG RNG TBR VIS WRA	10796	- JAYS BREZOVOR CLC OLG TBR WRA
6839	- RITA SINGER BRANDEIS ALT CLC	5580	- ALAN BRIAN ALT CLC HRB OLG REC RNG TBR WLD WRA
6293	- MICHAEL BRANDON. ALT CLC FSH HRB OLG TBR WRA	8502	- VALERIE BRICE CLC
1690	- LAURA BRANDT. CLC DRT WLD WRA	6483	- ALLEN BRICKEE CLC H2O HRB WRA
7784	- ALYSON BRANSON GEN	2828	- GEORGEA BRIDGES CLC
9565	- ALYSON BRANSON ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	10050	- HELEN BRIDGES ALT CLC ECN OLG RNG TBR VIS WRA
10320	- BARBARA A BRANTLEY ALT CLC ECN OLG RNG TBR VIS WRA	10728	- HEATHER A BRIDLIN ALT CLC TBR WRA
2482	- BEVERLY A BRASHEENS ALT ECN GEN	8922	- THOMAS BRIDWELL ALT CLC HRB OLG REC RNG TBR WLD WRA
7264	- DAVE BRATHERAM ALT CLC TBR WRA	7892	- DEBORAH BRIFFITH ALT CLC HRB OLG REC RNG TBR WLD WRA
6901	- BRATT. ALT CLC HRB OLG TBR WLD WRA	7163	- DAVID M. BRIGGS ALT CLC TBR WRA
7900	- D. BRATT. ALT CLC HRB OLG TBR WLD WRA	4149	- LINDA BRIGGS ALT CLC HRB OLG TBR WLD WRA
6062	- PETER BRAT" ALT CLC GEN HRB OLG RDS REC RNG TBR WLD WRA	8354	- MR & MRS BRIGGS CLC H2O HRB REC TBR VIS
8429	- MR & MRS AARON BRAUDE ALT CLC ECN OLG REC RNG TBR VIS WRA	4948	- MANILO BRIGHAM ALT CLC HRB OLG REC RNG TBR WLD WRA
10261	- KOLYA BRAUN ALT CLC REC TBR WRA	6447	- GAYLA BRIGHT ALT CLC HRB OLG REC RNG TBR WLD WRA
3184	- NANCY BRAUNER GEN	813	- LESLIE MAX BRIGHT ECN
3933	- NANCY BRAUNER GEN	3040	- LAURIE BRIGROIO CLC
10376	- JEANETT BRAUNES CLC ECN FSH H2O HRB OLG REC TBR VIS WLD	1535	- BERT BRILEY. TBR
6542	- JAIME C. BRAVBIAS ALT CLC ECN OLG RNG TBR VIS WRA	3135	- CALLIE BRINGOLF CLC TBR WLD
632	- BETTY BRAVER ALT CLC WRA	6853	- CAROL BRINNAN CLC TBR
5611	- BETTY BRAVER. ALT CLC HRB OLG REC RNG TBR WLD WRA	5469	- ROBERT BRION ALT CLC ECN OLG RNG TBR VIS WRA
7603	- C. JEFFREY BRAWLETT ALT CLC TBR WRA	7857	- DENNIS BRISBANE ALT CLC HRB OLG REC RNG TBR WLD WRA
2250	- MR & MRS. WILLIAM BRAY CLC TBR	8207	- MARY HELEN BRISCOE CLC HRB WRA
9171	- DANIEL BREAULT. ALT CLC ECN OLG RNG TBR VIS WRA	8232	- ROBERT BRISTEN ALT CLC HRB OLG TER WLD WRA
3662	- BERYL BREAUX CLC H2O HRB TBR WRA	2324	- DOUG BRISTOL CLC WRA
2568	- PAT BRECKENFIELD CLC TER WRA	10027	- J D BRISTOL CLC GEN HRB TBR
2567	- R R BRECKENFIELD CLC H2O REC TBR TRL VIS WRA	1706	- BONNIE BRISTOW CLC ECN HRB OLG TBR VIS WRA
10017	- DAVE BREEALOVE CLC GEN HRB TBR	2552	- STEPHEN BRISTOW ALT CLC TBR WIN WRA
4964	- EDMUND BREHI CLC DRT ECN OLG TBR VIS	1785	- SUSAN BRISTOW CLC
9187	- CAROL BREHIG ALT CLC ECN OLG RNG TBR VIS WRA	3500	- GLORIA BRISZ CLC TBR
9738	- JOSEPHEN BREHIO ALT CLC ECN OLG RNG TBR VIS WRA	6197	- DANA T BRITTINGHAM ALT CLC TBR WRA
420	- ALBERT, JR & SHARON BREHM ECN TBR	6853	- TRUDE J BRITTON CLC TBR
7782	- MILAN J BREITE WRA	3150	- JAN R BRITYER CLC HRB
6065	- BLAINE BRENDE CLC HRB	7795	- DAVID C. BROADLEY. CLC ECN TBR
8777	- GARY W BRENEAL ALT CLC ECN H2O OLG REC RNG TBR VIS WRA	2369	- BROADVIEW LUMBER CO RICHARDT MANSFIELD TBR
5702	- GEORGEANNE BRENNAN ALT CLC ECN OLG RNG TBR VIS WRA	3709	- JEFFERY BROADY ALT CLC TER WRA
5487	- SARA BRENNAN ALT CLC ECN OLG RNG TBR VIS WRA	6603	- PATRICE BROCHE ALT CLC HRB OLG REC RNG TBR WLD WRA
10113	- CURT BRENNER ALT CLC ECN OLG REC RNG TBR VIS WRA	9160	- CECIL BROCK ALT CLC ECN OLG RNG TBR VIS WRA
9336	- (FAMILY) BRENSON. CLC H2O HRB REC TBR VIS		

544	- CHARLES & MARY BROCK CLC HRB	6113	- CAROLYN BROWN ALT CLC TBR WRA
5354	- LORI BROCK ALT CLC ECN OLG RNG TBR VIS WRA	1876	- CATHERINE BROWN ALT CLC GEN
5356	- MARVA LYNN BROCK ALT CLC ECN OLG RNG TBR VIS WRA	4570	- CHELSEA BROWN CLC
11455	- MARY & CHARLES BROCK ALT CLC HRB TBR	10644	- CHRISTLE BROWN CLC H2O HRB REC TBR VIS
9162	- ROSE BROCK ALT CLC ECN OLG RNG TBR VIS WRA	6020	- CLYDE BROWN ALT CLC ECN OLG RNG TBR VIS WRA
3717	- MARY BROCKELL ALT CLC HRB OLG TBR WLD WRA	8146	- DAVID M BROWN CLC ECN FLE HRB TBR VIS WRA
6905	- CONNIE BROCKER CLC FLE OLG RDSTBR TRL	6209	- DELOS BROWN ALT CLC ECN OLG RNG TBR VIS WRA
5689	- ANNE BROCKFIELD ALT CLC HRB OLG REC RNG TBR WLD WRA	9488	- DONALD L BROWN AIR ALT CLC TER WRA
4692	- NANCY BROCKINGTON ALT CLC TBR WRA	9487	- DOROTHY BROWN ALT CLC REC TBR WRA
8108	- STEVE BROCKSAW ALT CLC ECN OLG RNG TBR TRL VIS WRA	3500	- E & CAROLYN BROWN CLC TBR
2855	- GRETA BRODA ALT CLC FSH H2O TBR	7803	- EDWARD G. BROWN ALT CLC TBR WRA
40	- HENRIETTA BRODA ALT CLC HRB REC VIS	9503	- EDWARD J BROWN CLC ECN GEN HRB RNG TER TRL
615%	- HENRIETTA BRODA ALT CLC HRB OLG REC RNG TBR WLD WRA	4245	- ELIZABETH BROWN ALT CLC LND RNG TBR WRA
636	- MARGARET BRODA. CLC ECN FLE HRB OLG TBR VIS WRA	7839	- ELIZABETHA BROWN ALT CLC TBR WRA
7053	- MARGARET BRODA ALT CLC HRB OLG REC RNG TBR WLD WRA	11187	- ERINS BROWN CLC OLG TER WRA
12003	- MARGARET BRODA CLC ECN OLG TBR WIN WRA	6387	- GENEVIEVE BROWN. ALT CLC ECN OLG RNG TBR VIS WRA
11252	- RANCE BRODA CLC DRT RDS TBR	35	- GLORIA HOWAT BROWN CLC ECN RNG TBR
370	- ROBERT J BRODA CLC DRT H2O OLG RDS TBR	156	- GLORIA HOWAT BROWN ALT CLC ECN HRB RNG TER
436	- ROBERT J BRODA CLC LND OLG RNG TBR WIN WRA WSR	6225	- GREG BROWN ALT CLC ECN OLG RNG TER VIS WRA
1711	- ROBERT J BRODA CLC ECN HRB TBR VIS WRA	10238	- GREGORY L BROWN ALT CLC TBR WRA
6656	- PATRICIA BRODIE ALT CLC ECN OLG RNG TBR VIS WRA	302	- JEANEITE L BROWN ALTTBR WRA
1347	- CARROL BROEMER CLC FLE GEN HRB	4293	- JESSICA BROWN ALT CLC HRB OLG REC RNG TBR WLD WRA
9638	- MARISA BRONSON ALT CLC TBR WRA	8532	- JOSEPH L. BROWN ALT CLC ECN OLG RNG TBR VIS WRA
5389	- MARVA BRONSON ALT CLC HRB OLG REC RNG TBR WLD WRA	5076	- JULIE BROWN ALT CLC ECN OLG RNG TBR VIS WRA
9642	- SYDNN BRONSON ALT CLC TBR WRA	6982	- KIMERI BROWN ALT CLC ECN OLG RNG TER VIS WRA
5075	- BREANN BROOK ALT CLC ECN OLG RNG TBR VIS WRA	9684	- MELANIE S BROWN ALT CLC TBR WRA
10594	- GERALD & MARY BROOK ALT CLC HRE OLG TBR WLD WRA	1641	- MELINDA BROWN CLC RDS WSR
9873	- GERALD & MARY BROOK ALT CLC HRB OLG TBR WLD WRA	387	- MICHAEL BROWN ECN TBR VIS WRA
5886	- NAOMI BROOKER ALT CLC HRB OLG REC RNG TBR WLD WRA	5146	- MICHAEL BROWN ALT CLC HRB OLG REC RNG TBR WLD WRA
7862	- CYNTHIA BROOKS ALT CLC HRB OLG REC RNG TBR WLD WRA	6226	- MIKE BROWN ALT CLC ECN OLG RNG TER VIS WRA
8086	- NATALIE BROOKS ALT CLC TBR WRA	7031	- PHILIP R BROWN ALT CLC TBR WRA
4259	- PAM BROOKS CLC	6227	- ROBERT BROWN ALT CLC ECN OLG RNG TBR VIS WRA
10302	- VINCENT BROOKS ALT CLC ECN OLG RNG TBR VIS WRA	980	- ROBERT M BROWN ECN
1614	- WALLACE C BROOKS ALT	8034	- ROBYN M BROWN ALT CLC ECN OLG RNG TBR TRL VIS WRA
5789	- ERIC M BROTMAN ALT CLC HRB OLG REC RNG TBR WLD WRA	e45	- ROD BROWN ECN TBR
10359	- DON BROUSSARD CLC HRB RDS	4057	- ROSS BROWN ALT CLC HRB LND OLG RDS TBR WLD WRA
4628	- MARJORIE BROUSSARD ALT CLC FLE OLG	9358	- SHANE BROWN ALT CLC HRB OLG REC RNG TBR WLD WRA
3289	- CHARLES BROUSSE CLC ECN HRB TBR WRA	2940	- SHARON BROWN CLC HRB RNG TRL
8198	- ERIC BROWER ALT CLC HRB OLG TBR WLD WRA	4550	- STEPHEN BROWN CLC ECN HRB RNG TER WRA
5877	- BARBARA BROWN ALT CLC HRB OLG REC RNG TBR WLD WRA	7056	- SUNSHINE BROWN ALT CLC HRB OLG REC RNG TBR WLD WRA
10227	- BARBARA BROWN ALT CLC TBR WRA	2341	- SUSAN BROWN ALT GEN TBR
2353	- BRAD BROWN TBR	7062	- SUSAN BROWN ALT CLC HRB OLG REC RNG TBR WLD WRA
1635	- C I BROWN ALT CLC GEN REC WSR	73	- THERESE BROWN ALT CLC HRB RNG TBR WRA
		9875	- THERESE BROWN ALT CLC ECN OLG RNG TBR VIS WRA

6853	TIM BROWN' CLC TBR	7281	- RISA BUCK ALT CLC TBR WRA
11509	U BROWN. CLC DRT HRB	5191	- CHRIS BUCWNGHAM ALT CLC ECN OLG
2117	WILLIAM E BROWN. TBR		RNG TBR VIS WRA
5921	- WILLIAM H BROWN. ALT CLC ECN OLG RNG	5190	- JENNIFER BUCKINGHAM ALT CLC ECN OLG
	TBR VIS WRA		RNG TBR VIS WRA
11046	MARCELENE BROWN ALT CLC ECN FSH H2O	6851	- BRIAN BUCKLE TBR
	HRB SNP TBR TRL WLD WRA	10607	- GLADYS BUCKLES CLC H2O HRB REC TBR
10937	PEGGY M BROWN ALT CLC ECN HRB TBR		VIS
	WRA	10568	- BUCKLEY. CLC GEN HRB TBR
621	MICHAEL L BROWN, JR . ECNTBR VIS	497	- JOHN BUCKLEY' CLC WRA
2454	DAVE BROWN ECNTBR	4065	- MR & MRS JOHN BUCKLEY CLC OLG RNG
278	ALICE BROWNFIELD ALT CLC ECN FSH H2O		TBR WRA
	HRB RDS REC RNG TBR WLD WRA	4666	- MARCIA BUCKMAN ALT CLC TBR WRA
319	ANTOINEITE BROWNING GEN TBR	5135	- JOHN BUCKMASTER ALT CLC HRB OLG REC
1601	CLEM BROWNING GEN		RNG TBR WLD WRA
4869	DAVE BROWNING ALT CLC HRB OLG REC	3776	- JACQUIE BUCKNELL. CLC GEN HRB TBR
	RNG TBR WLD WRA	8924	- DALE E BUCKSTAFF ALT CLC HRB OLG REC
1500	ED BROWNLEE. GEN		RNG TBR TRL WLD WRA
6649	DOROTHY & CHARLES BROWNOLD. CLC	1326	- BUD FRANK LUMBER SALES DON FRANK
	WRA		ECNTBR
8071	SIERRA BRUCKNER' ALT CLC TBR WRA	6302	- CAROLM BUDZINSKI ECN
6380	BARBARA BRUMBELOW ALT CLC HRB OLG	5724	- TOM BUDZINSKI ECNTBR VIS WRA
	REC RNG TBR WLD WRA	1309	- RICK BUEKBEE ALT CLC ECN HRB OLG REC
5961	- PHYLLIS BRUMMELL ALT CLC HRB OLG REC		TBR VIS WLD
	RNG TBR WLD WRA	4519	- MR & MRS. M J BUFFINGTON. CLC ECN OLG
6782	- WENDY BRUMMER' ALT CLC HRB OLG REC		REC RNG TBR TRL VIS WIN
	RNG TBR WLD WRA	3889	- BARBARA BUFFUM ALT CLC HRB OLG TBR
289	- GARVAR BRUMMEIT ALT		WLD WRA
1327	- TERRY BRUMWELL' ECNTBR	6671	- BARBARA BUFFUM ALT CLC ECN OLG RNG
7671	- CAROLYN BRUNDTLAND ALT CLC HRB OLG		TBR VIS WRA
	REC RNG TBR WLD WRA	8966	- LINDA PEARL BUFFY ALT CLC ECN OLG RNG
7239	LAURA BRUNEL ALT CLC ECN OLG RNG TBR		TBR VIS WRA
	VIS WRA	5503	- LAURA BUGBUN ALT CLC TBR WRA
7244	LOUIS P BRUNEL' ALT CLC ECN OLG RNG	3500	- G O BUGGAN CLCTBR
	TBR VIS WRA	8932	- M BUGGY ALT CLC ECN HRB OLG REC RNG
6912	ANN BRUNETH ALT CLC TBR WRA		TBR WLD WRA
8070	JOEL BRUNGARDT ALT CLC TBR WRA	10169	- FRANKBUI CLC
9216	ELAINE G BRUNSON CLC DRT ECN H2O	2586	- JAN L BUJAK ALT CLC
	HRB OLG RDS REC RNG TBR TRL WRA	5483	- KATHLEEN BUKEY' ALT CLC ECN OLG RNG
9216	DIANE BRUNSON CLC DRT ECN H2O HRB		TBR VIS WRA
	OLG RDS REC RNG TBR TRL WRA	280	- DEBBIE BULGER CLC REC TBR
5996	KACY BRUSH ALT CLC TBR WRA	5407	- JIM BULGER ALT CLC TBR
62	- STEPHEN L BRUSH CLC FSH	9022	- JACQUIRE BULIN ALT CLC ECN OLG RNG
2830	- JEAN BRUSHER. H2O REC TBR		TBR VIS WRA
3541	- IDA BRYAN CLC H2O HRB OLG REC TBR	984	- GEORGE BULKELEY; TBR
10991	KURT A BRYAN ALT CLC ECN FSH H2O HRB	7381	- DAN BULL CLC OLG REC TBR WLD WRA
	SNP TBR TRL WLD WRA	9w3	- J. MICHAEL BULLIO ALT CLC TBR WRA
11038	MARIE E. BRYAN ALT CLC ECN FSH H2O	3726	- A BULLOCK. CLC ECN OLG TBR WRA
	HRB SNP TBR TRL WLD WRA	6992	- ADAM BULLOCK ALT CLC HRB OLG REC
5414	- G J BRYANT' ALT CLC DRT FLE HRB OLG		RNG TBR WLD WRA
	TBR WLD WRA	2247	- ERNIE BULLOCK ALT ECN H2O REC TBR
8281	GINGER BRYANT. ALT CLC ECN HRB OLG	8856	- JANET BULLOCK ALT CLC ECN OLG REC
	RNG TBR VIS WRA		RNG TER VIS WRA
10235	MARIANNE BRYANT. ALT CLC TBR WRA	6206	- TERRY BUNICH ALT CLC ECN OLG RNG TBR
3543	RAMONA E. BRYANT: CLC LND RDS REC RNG		VIS WRA
	TBR VIS WRA	10508	- GREGORY T BUNKER CLC ECN HRB WRA
2200	WILLIAMS BRYANT' TBR WRA	1494	- JAMES D BUNKER ECN GEN TBR
8280	MARILYNK. BRYART' ALT CLC ECN OLG RNG	8130	- ALEXANDRIA BUNTEN ALT CLC GEN HRB
	TBR VIS WRA		OLG WRA
6780	MARK BUBOIS ALT CLC HRB OLG REC RNG	6858	- ANITA BUNTER ALT CLC GEN RDS RNG TBR
	TBR WLD WRA		TRL
7902	D. BUCK CLC H2O HRB REC TBR TRL VIS	8926	- ANITA BUNTER ALT CLC HRB OLG REC RNG
	WRA		TBR WLD WRA
4257	DAVID BUCK CLC TBR WSR	3996	- JUDITH BUNTING: ALT CLC HRB OLG REC
6077	JULIE BUCK ALT CLC TBR WRA		RNG TBR WLD WRA
7836	MARGARET J BUCK ALT CLC TBR WRA		
5743	RISA BUCK. CLC ECN GEN HRB OLG RNG		
	TBR TRL		

10232	ANKLIN E ALT CLC 3R WRA	2865	- WILLIAM D BURROWS, JR ALT CLC ECN
8735	COQUELIN C BURATOVICH CLC FSH		OLG RNG TBR WRA
4652	SHANNON BURCH ALT CLC 3WR	5637	- PAT BURT. ALT CLC HRB OLG REC RNG TBR
2039	- BARBARA BURCHETT ALT ECN GEN		WLD WRA
57	- DALE BURDETTE ALT CLC OWL RDS RNG	7199	- ELLEN SAMMS BURTNER ALT CLC TBR WRA
	TRL WLD	10755	- A. BURTON ALT CLC HRB OLG REC TBR WLD
3426	- (FAMILY) BURDICK ALT CLC HRE		WRA
3945	- (FAMILY) EURDICK ALT CLC HRB	11103	- DAVID BURTON CLC
9241	- BARBARA BURDICK CLC	6081	- DAVIDA BURTON CLC
9988	- JANI EURDICK: ALT CLC TBR WRA	6256	- JOHN BURTON ALT CLC TBR WLD WRA
5516	- BILL BURDIER ALT CLC TBR WRA	3285	- RICHARD C BURTON ALT CLC HRB OLG
3269	- HUNTER EURGAN CLC		RNG TBR WRA
6752	- EARL BURGESS ALT CLC HRB OLG REC RNG	3510	- SYDNE & DAVE BURTON ALT CLC HRB OLG
	TBR WLD WRA		TBR WLD WRA
5310	- EVA BURGESS ALT CLC HRB OLG REC RNG	3150	- TOM BURTON CLCHRB
	TBR WLD WRA	8364	- WILLIAM BURTON ALT CLC HRB OLG TBR
1504	- MYRTLE E BURGESS. TBR		WLD WRA
7955	- CLAUDIA F BURGIN ALT CLC TER WRA	1849	- F M BUSBY GEN
6306	- CHARLANNE BURK CLC	2304	- DOUGLAS G BUSCH, ATT-AT-LAW ECN TBR
516	- MIKE BURK TBR	5455	- NANCY BUSCHE-FEDON ALT CLC ECN OLG
10950	- HUBERT BURK CLC HRB WRA		RNG TER VIS WRA
3714	- BECKY BURKE ALT CLC TBR WRA	10480	- JOSEPH M BUSH ALT CLC ECN TBR WRA
2507	- CONNIE BURKE ALT CLC TBR WRA	11509	- L F BUSH CLCDRTHR
8754	- DAWN BURKE ALT CLC HRB OLG REC RNG	7854	- R M BUSH ALT CLC TBR WRA
	TBR WLD WRA	11041	- MIKE BUSH ALT CLC ECN FSH H2O HRB SNP
3711	- JOHN BURKE ALT CLC TBR WRA		TBR TRL WLD WRA
1892	- MARK A. BURKE GEN	11848	- LORABUSHONG CLC
2777	- ROGER & CHINA BURKE ALT CLC OLG	1707	- ARMANDO BUSICK CLC ECN HRB TBR VIS
7263	- SUZANNE MARIE BURKE ALT CLC TBR WRA		WRA
7382	- SARAH BURKES CLC OLG TBR WRA	11282	- ARMANDO BUSICK CLC ECN TBR VIS
2769	- FRED H BURKHARDT ALT CLC HRE OLG TER	9205	- BODHI D BUSICK CLC HRB RNG TER
	WLD WRA	1709	- PERISSA BUSICK: CLC ECN HRB TER VIS
3150	- JEFF BURKHOLDER CLC HRB		WRA
3500	- MADELINE & JAMES EURKHOLDER. CLC TBR	3284	- PERISSA BUSICK CLC OLG TBR
6193	- JUDY BURKOWSKY ALT CLC HRB OLG REC	4188	- PERISSA BUSICK CLC FLE GEN HRB OLG
	RNG TER WLD WRA		RDS TER TRL WRA
3150	- GARY BURMAN CLC HRB	8743	- PERISSA BUSICK CLC ECN TBR
5205	- CHRISTINE BURNES' ALT CLC HRB OLG REC	11281	- PERISSA BUSICK OLG RDS REC TBR
	RNG TBR WLD WRA	7324	- PATRICIA BUSS. ALT CLC TER WRA
5638	- CAROL BURNETT ALT CLC HRB OLG REC	6326	- CHERYL & DAVE BUSSEN ALT CLC HRB OLG
	RNG TBR WLD WRA		TBR WLD WRA
1534	- BETTY BURNS. GEN H2O REC TBR TRL WLD.	10076	- CARL BUTAK ALT CLC ECN OLG RNG TBR
8290	- DAVID BURNS CLC OLG TER WRA		VIS WRA
1834	- DENISE BURNS ALT GEN	8575	- LISA A BUTH CLC ECN HRB TBR VIS WLD
6679	- EUGENE BURNS. ALT CLC HRB OLG REC		WRA
	RNG TBR WLD WRA	8787	- DIANE BUTLER ALT CLC ECN OLG RNG TBR
6449	- NANCEY BURNS. ALT CLC HRB OLG REC		VIS WRA
	RNG TBR WLD WRA	10787	- LUIS BUTLER ALT CLC TBR WRA
2252	- SUE BURNS CLC FSH HRB REC TRL	1649	- PAT BUTLER CLC TBR
1833	- THOMAS BURNS ECN GEN TBR	11089	- RAY BUTLER CLC ECN FSH H2O RDS RNG
5803	- BRIAN BURNSIDE ALT CLC ECN OLG RNG		TBR WLD
	TBR VIS WRA	4459	- RAYMOND BUTLER FSH H2O RDS RNG SIA
9181	- KELLY BURR' ALT CLC ECN OLG RNG TBR		TBR WLD
	VIS WRA	10629	- VIRGRUCE L BUTLER CLC H2O HRB REC
4078	- SCOTT BURR CLC ECN		TBR VIS
20500	- SUSAN BURR TRL	11310	- BUTTE CO BOARD SUPERVISORS ED
5394	- BURRITO FACTORY CAROL RIVERA ALT CLC		MCLAUGHLIN ECN TER
	HRE OLG REC RNG TER WLD WRA	3410	- BUTTE CO CHIEF ADMIN OFFICER MARTIN
2556	- JIM BURROUGHS LND REC TBR WRA		NICHOLS CLC
11340	- JIM BURROUGHS GEN LND OWL REC TBR	1236	- PATRICIA BUTTER GEN TBR
	WLD	1455	- CARLENE BUTTERFIELD ECN TBR
3500	- STEVE BURROUGHS CLC TBR	9681	- CLYDE BUTTERFIELD ALT CLC TBR WRA
10539	- JASON BURROW CLC GEN HRB TBR	9710	- ELEANORE BUTTERFIELD ALT CLC ECN OLG
3500	- VIRGINIA BURROW CLC TBR		RNG TBR VIS WRA
5815	- CINDY BURROWS ALT CLC HRB OLG REC	9679	- JANE BUTTERFIELD ALT CLC TBR WRA
	RNG TBR WLD WRA	9062	- ILA BUTTERFIEL ALT CLC TBR WRA
4584	- SARA BURROWS CLC	9369	- P K BUTTERWORTH CLC H2O HRB REC TBR
2910	- WILLIAM D BURROWS ALT CLC HRE OLG		VIS
	TBR WLD WRA		

8268	- ALAN L BUTTS ALT CLC ECN OLG REC RNG TER VIS WRA	11319	- CA STATE LANDS COMMISSION JAMES F TROUT H2O URE
10154	- DERRICK BUTTS CLCTER	1570	- CA STATE SENATE HONORABLE JOHN DOOLITTLE ECN HRE OWL
4522	- EVERETT BUTTS CLC ECN HRE RNG	11059	- CA STATE SENATE HONORABLE JOHN DOOLITTLE ECN OWL TER
6885	- EVERETT D BUTTS ALT ECNTER	9899	- CAL TROUT RICHARD H MAY CLC FSH H2O HRE LND OLG REC RNA RNG SIA SNP TER WLD WRA WSR
4560	- JONATHAN BUTTS ALT CLC ECN HRE OLG REC RNG TER WLD WRA	9597	- CA WILDERNESS COALITION JIM EATON CLC HRB PLN RDS REC RNG TER TRL WLD WRA WSR
8772	- JUDY BUTTS ALT CLC ECN OLG RNG TER VIS WRA	8504	- CA WOMEN IN TIMBER CAROL BLANKENSHIP ECN GEN REC
4049	- MARILGA BUTTS. CLC ECN	4509	- CA WOOD FIBER CORP. CLC GEN OWI
1056	- MICHAEL EUZEEE CLC RDS TER	1974	- CA WOODFIBER CORP RICHARD FREY ECN TER WRA
1473	- CHRISTOPHER EYAL. CLC GEN HRE OLG RDS RNG TBR	11226	- CA WOODFIBER CORP RICK FREY TBR WRA
2291	- K.D EYEEE. CLCTER	532	- CA-FRESNO OIL CO JD RUSCHH ECN RDS TER
1309	- MERRI BYLSMA' ALT CLC ECN HRE OLG REC TER VIS WLD	4500	- CECIL CABALLERO ALT CLC HRE OLG REC RNG TER WLD WRA
5577	- BRYAN EYOD ALT CLC HRB OLG REC RNG TER WLD WRA	6419	- ERNEST CABALLERO ALT CLC HRB OLG REC RNG TER WLD WRA
2553	- DENNIS W & BARBARA EYRAM CLC ECN FSH GEN HRB TBR	6420	- LISA CABALLERO ALT CLC HRE OLG REC RNG TER WLD WRA
7821	- PAUL EYRD' ALT CLC TBR WRA	9692	- JUDITH M CABELL. ALT CLC GEN TBR WRA
7154	- ROEYN BYRD ALT CLC TER WRA	10890	- TISHA L CABLE CLC ECN
352	- DOROTHY D EYRNE. CLC ECN GEN RDS TER TRL	6455	- FRANKS CAERAL ALT CLC ECN OLG RNG TER VIS WRA
8019	- JOHN EYRNES ALT CLC ECN OLG RNG TER VIS WRA	6456	- NANCY CABRAL ALT CLC ECN OLG RNG TBR VIS WRA
8020	- SHARI EYRNES ALT CLC ECN OLG RNG TBR VIS WRA	10525	- CRAIG CADDY CLC GEN HRB TBR
4540	- MICHELE & DAVID BYRON. CLC GEN REC TER	6297	- JOAN CAHOON CLC OLG TER WRA
8315	- CAROLINE C .ALT CLC HRB OLG REC RNG TER WLD WRA	10935	- PHYLLIS CAIL. CLC
2935	- CA ASSN 4WD CLUBS, INC ED DUNKLEY' ECN RDS TER TRL	4464	- MARY CAIRNS ALT CLC ECN PLN RDS TBR
11146	- CA ASSN 4WD CLUES, INC ED DUNKLEY GEN RDS TRL WRA	3722	- ROBERT CAIRNS ALT ECN TBR
3454	- CA FLY FISHERMAN UNLIMITED CLC FLE FSH H2O TBR WSR	7142	- STEVEN CALAIS ALT CLC ECN OLG RNG TBR VIS WRA
11107	- CA FOREST PROT. ASSN RYAN HAMILTON LND TER	6737	- JOSEPH & KATHRYN CALAMUSA ALT CLC ECN OLG RNG TBR VIS WRA
1880	- CA LICENSED FORESTERS ASSN W E SNYDER. ALT GEN	1291	- MR & MRS ED CALDERON CLC
4361	- CA NATIVE PLANT SOCIETY TAHOE CHAPTER ROBERT ALLARD CLC DRT ECN H2O HRB LND REC RNA RNG SIA SNP TBR TRL WLD	6408	- SUSANN CALDERON ALT CLC ECN OLG RNG TER VIS WRA
20005	- CA NATIVE PLANT SOCIETY JAMES JOKER CLC ECN H2O RNA RNG SIA SNP TBR WLD	7788	- MARGIE CALE CLC H2O HRB REC TBR VIS
11157	- CA NEV' SNOWMOBILE ASSN BUC HOOKER RFC	9342	- SUSAN & LEON CALERWELL CLC H2O HRB REC TBR VIS
10838	- CA REG W Q C B. CENTRA VALLEY JEROLD A IRUNS. ECN H2O	1077	- DAVID W CALFEE III RDS RNG TBR TRL
20454	- CA REG WATER CONTROL JAMES KEYKENDALL H2O RDS REC RNA SIA TBR WIN	3613	- JOHN J CALGE ECN GEN OWL TER WLD
11320	- CA RESOURCES AGENCY GORDON F. SNOW CLC DRT ECN FLE H2O LND OLG OWL RDS REC RNA RNG SIA TER VIS WIN WLD WSR	6452	- CINDY M CALHOUN CLC RDS REC
8740	- CA SAVE OUR STREAM COUNCIL JERRY BISHOP, PRESIDENT CLC RDS TBR TRL	4921	- SAL CALI ALT CLC HRE OLG REC RNG TBR WLD WRA
8486	- CA) FISH TECTIOI CE T J BAIOCCHI ALT CLC ECN LE FSH) LND RDS RNA RNG TBR VIS WRA WSF	20498	- CALIF LEGISLATURE BYRON D SHER CLC ECN GEN H2O
4280	- CA STATE ASSEMBLY HONORABLE LLOYD ONNELLY ALT CLC GEN HRB OLG REC RA	1055	- CALIFORNIA TROUT RALPH F CUTTER CLC ECN H2O OLG RNG TBR WRA
6868	- CA STATE BOARD OF FORESTRY HAROLD F. WALT CLC ECN FLE GEN LND REC TBR	5003	- ADAM CALL CLC
613	- CA STATE COURT/APPEALS WILLIAM A NEWSOM CLC GEN RDS TER WRA	7901	- BEVERLY CALL, CLC RDS
		4946	- CHERI CALLAHAN ALT CLC ECN OLG RNG TER VIS WRA
		4396	- KAREN & ROSE CALLAHAN CLC ECN HRB TER
		11155	- ROSE A CALLAHAN ALT CLC HRE
		4384	- WILLIAM CALLAHAN ALT CLC HRB
		4590	- AMY CALLAWAY CLC TBR
		7125	- PATSY CALLAWAY ALT CLC ECN OLG RNG TER VIS WRA

4101	- BOB CALLENDER CLC FLETBR	6463	- D CANTISANO ALT CLC ECN OLG RNG TBR VIS WRA
6040	- LAURA CALLETTA ALT CLC ECN OLG RNG TBR VIS WRA	3331	- MARILYN CANTISANO CLC HRB TBR
4375	- GENE CALLHON CLC HRB REC TBR	8491	- ROSEMARIE CAPACCIOLI ALT CLC HRB OLG TBR WLD WRA
3946	- JOHN CALLNON CLC ECN GEN HRB OLG TBR	9176	- SHELLY CAPBELL ALT CLC ECN OLG RNG TBR VIS WRA
6852	- FRED CALLONI CLC TBR	7249	- MICHAEL J CAPELLO ALT CLC ECN OLG RNG TBR VIS WRA
11123	- CAL OAK LUMBER RICH WADE HRB LND RNG TBR	4588	- GEORGE CAPEWELL, JR CLC REC WLD
795	- JOHN C CALVERT ECN	1492	- CAPFTAL LUMBER CO JOHN E GASKIN, PRESIDENT GENTBR
7411	- MICHAEL CALVIN ALT CLC ECN GEN OLG RNG TBR VIS WRA	7678	- SARAH CAPITELLI CLC OLG TBR WRA
7409	- TERRY CALVIN ALT CLC ECN OLG RNG TBR VIS WRA	8908	- IRVING CAPLOW ALT CLC ECN OLG RNG TBR VIS WRA
130	- TOM CAMARA CLC HRB RDS	7088	- RANDI CAPLOW ALT CLC ECN OLG RNG TBR VIS WRA
9676	- MAIREYORE CAMARE ALT CLC TBR WRA	9457	- GARY CAPSHAW ALT CLC ECN OLG RNG TBR VIS WRA
8707	- BERNIE & SHIRLEY CAMENSON CLC	9456	- MORGAN CAPSHAW ALT CLC ECN OLG RNG TBR VIS WLD WRA
2768	- BILL J CAMERON ALT CLC OLG RDS TBR WRA	6932	- MICHAEL CAPUTE ALT CLC TBR WRA
2214	- STEVEN D CAMERON ALT ECN GEN TBR	7970	- KEVIN A CARALEZ ALT CLC HRB OLG REC RNG TBR WLD WRA
8621	- JEAN CAMP CLC OLG TBR WRA	4205	- MARIA CARALLERO ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
4521	- ALAN CAMPBELL CLC TBR	4309	- MR & MRS CARASCO RNG
3031	- BLANCHE J CAMPBELL CLC HRB REC TBR WRA	4758	- CHRIS CARBONE ALT CLC
5763	- BRIAN CAMPBELL ALT CLC ECN OLG RNG TBR VIS WRA	6662	- CAROL CARD ALT CLC ECN OLG RNG TBR VIS WRA
2953	- CHUCK CAMPBELL AIR TBR WLD	6942	- GEORGE CARDAZYCE ALT CLC TBR WRA
8670	- GAIL R CAMPBELL TBR	9546	- ANNA CARDENAS CLC HRB
8004	- JEFF CAMPBELL ALT CLC ECN OLG REC RNG TBR VIS WRA	3321	- JOHN CARDINALE CLC ECN REC TBR
8985	- JIM CAMPBELL CLC HRB REC TBR VIS	9687	- MONIQUE CARDINET ALT CLC TBR WRA
8925	- JOE CAMPBELL ALT CLC HRB OLG REC RNG TBR WLD WRA	10280	- MIKE CAREIS ALT CLC TBR WRA
10382	- LINDA CAMPBELL CLC ECN GEN HRB TBR VIS	9262	- KEITH CARELLA CLC FSH TBR
6087	- MARIE J & WAYNE L CAMPBELL REC	3278	- KASIE CAREW CLC TBR WRA
20455	- MIKE CAMPBELL TBR TRL	8062	- LINDA C A R N ALT CLC TBR WRA
10661	- RUTH CAMPBELL ALT CLC ECN OLG RNG TBR VIS WRA	3295	- MARIANN CARH CLC OLG TBR WRA
11037	- DEBBIE G CAMPBELL ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	3500	- DON CARIGLIN CLC TBR
11043	- WEEZIE CAMPBELL ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	607	- PHILIP MICHAEL CARL ALT CLC
1279	- MICHAEL CAMPEAUX CLC	1309	- JENNIFER L CARLI ALT CLC ECN HRB OLG RECTBR VIS WLD
1276	- MRS. MICHAEL CAMPEAUX ALT CLC REC TBR VIS	5461	- TERESA CARLI ALT CLC ECN OLG RNG TBR VIS WRA
468	- LESLIE F CAMPODONICO ECN OLG TBR TRL	6204	- JANE CARLING ALT CLC ECN OLG RNG TBR VIS WRA
467	- VINCE CAMPODONICO CLC DRT GEN RDS	208	- ALLEN CARLSON CLC ECN H2O RNG TBR
9001	- JIM CAMPOS ALT CLC GEN HRB OLG REC RNG TBR WLD WRA	6916	- DIANE H CARLSON ALT CLC TBR WRA
10435	- KEN CAMI CLC H2O HRB REC TBR V	7433	- GLENN CARLSON ALT CLC HRB OLG REC RNG TBR WLD WRA
6684	- RENEE CA ALT CLC HRB OLG REC RI TBR WLD WRA	6853	- LETITIA CARLSON CLC TBR
4694	- LI CAN T CLC TBR WRA	7914	- ALAN CARLTON CLC RDS TBR WRA
4013	- EDWIN & OLIVE CANEPA ALT CLC HRB OLG TBR WLD WRA	10226	- KAREN CARLTON ALT CLC TBR WRA
e475	- BARBARA N CANN ALT CLC TBR	9272	- JOHN CARLYON ALT CLC HRB OLG TBR WLD WRA
8503	- CHRISTINE CANNON ALT CLC HRB OLG REC RNG TBR WLD WRA	9273	- KAY CARLYON ALT CLC HRB OLG TBR WLD WRA
10276	- DEBRA M CANNON ALT CLC TBR WRA	792	- DALE CARMAN GEN TBR
8457	- KATHLEEN CANNON ALT CLC HRB OLG REC RNG TBR WLD WRA	9467	- DANA CARMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
4999	- BOB CANTISANO CLC	9409	- CHARLES CARMELL ALT CLC ECN OLG RNG TBR VIS WRA
8698	- BOB CANTISANO ALT CLC ECN HRB OLG RNG TBR VIS WRA	8360	- RANDAN S CARMICHAEL ALT CLC HRB OLG TBR WLD WRA
9658	- BOB CANTISANO ALT CLC TBR WRA	3359	- MICHAEL CARNAHAN ECN GEN OLG WRA
7243	- CIRRA CANTISANO ALT CLC ECN OLG RNG TBR VIS WRA	2477	- WILLIAM CARNAZZO CLC FSH H2O TBRTRL WRA

4928	- PAULA, CARO. ALT CLC HRB OLG REC RING TBR WLD WRA	8205	- ELLEN L CASE CLC ECN HRB TBR
8	- MERLA CAROTHERS. CLC HST TER TRL VIS	1303	- PATRICIA CASE CLC HRB TBR
365	- MERLA CAROTHERS CLC OLG	7576	- BLEENEHIL R CASEY ALT CLC ECN OLG RING TBR VIS WRA
967	- MERLA CAROTHERS ALT RING WLD	9344	- JA CASEY CLC HRB OLG RING TBR WRA
1879	- MERLA CAROTHERS ALT CLC H20 HST OLG RING SIA	11079	- JOHN CASEY ECN GEN REC TBR WRA
10258	- SYDNEY CAROTHERS' LT (TBR WRA	4771	- JUANITA CASEY CLC OLG TBR WRA
206	- BETSY CARPENTER N TER	4311	- KEVIN CASEY CLC ECN TBR
10180	- MARC CARPENTER.)	8459	- SUSAN CASHON' ALT CLC HRB OLG REC RING TBR WLD WRA
2298	- CHRISTOPHER J CA CLC GEN EC VIS	8385	- COSME CASIANILT. JR ALT CLC HRB OLG TBR WLD WRA
2514	- DORIS CARR ALT TER WRA	8691	- KIM & MARK CASIDA ALT CLC ECN GEN HRB LND REC RING TBR VIS WRA
6831	- EDWARD M CARR. CLC GEN	3025	- DONALD R CASLER CLC
11326	- EDWARD M CARR CLC	7504	- CASLERE ALT CLC HRE OLG REC RING TBR WLD WRA
9953	- JADE CARR CLC GEN HRB TBR	4429	- THOMAS. MARY & TAMINY CASPER ECN TBR
4646	- JOAN C CARR. ALT CLC REC TBR WRA	2257	- PAUL & RUTH CASSADY ALT CLC HRB OLG REC TBR WLD WRA
20500	- ROBERT CARR, JR.: TRL	446	- ANDREW R CASSANO ECN TBR
11509	- CLAIRE CARREN CLC DRT HRB	5386	- TIMOTHY C CASSIDY' ALT CLC HRE OLG REC RING TBR WLD WRA
4929	- H GENE CARRICO ALT CLC HRE OLG REC RING TBR WLD WRA	5767	- SINDONA CASSTEEL ALT CLC ECN OLG RING TER VIS WRA
8590	- CHARLIE CARROLL CLC OLG TBR WRA	8110	- HAROLD CAST. TER
6853	- JACKIE CARROLL' CLC TBR	10182	- LAURIE CASTAGNA CLC
1347	- JANINE G CARROLL CLC FLE GEN HRE	6852	- DAVID CASTANEDA CLC TBR
10148	- PATRICIA M CARROLL ALT CLC ECN OLG RING TBR VIS WRA	2328	- SINDONA CASTEEL. CLC DRT ECN H20 TBR WLD WRA
4801	- SANDRA CARROLL ALT CLC HRE OLG REC RING TBR WLD WRA	7186	- MARTHA CASTELLO ALT CLC TBR WRA
7653	- SCOTT CARROLL' CLC OLG TBR WRA	11265	- PAUL CASTIGLIONI. CLC ECN HRB RDS REC TBR
8101	- MARJORIE LARSON CARSON' ALT CLC HRB OLG TER WLD WRA	9193	- DONNA CASTILE ALT CLC ECN OLG RING TER VIS WRA
1441	- SUS CARSON-CROMELIN' CLC WRA	ea93	- NANCY CASTISAN. ALT CLC ECN OLG RING TER VIS WRA
10020	- GER CARTE CLC GEN HRE TBR	4790	- BETTY CASTOR CLC OLG TBR WRA
8704	- ALICIA CARTER' CLC HRE	10963	- BARBARA CASTRO. ALT CLC ECN FSH H20 HRB SNP TER TRL WLD WRA
8409	- ALICIA CARTER' ALT CLC H20 HRB RDS REC TER TRL VIS WLD WRA	869	- JOHNSON CATES ECN REC TBR
117	- AN C. CLC FFS RDS RING	10618	- KEN CATH CLC H20 HRB REC TBR VIS
4632	- J. JUVAL CARTER' ALT CLC HRB RDS TBR	2787	- JAMES V CATHEY, PRES ECN GEN TBR
10112	- GRACE CARTER' ALT CLC ECN OLG RING TER VIS WRA	11509	- BARRY CATLETT' CLC DRT HRB
4572	- JAMES CARTER CLC VIS	8059	- TRACY CATON ALT CLC TBR WRA
6092	- JAMES CARTER ALT CLC ECN OLG RING TBR VIS WRA	8407	- CATHY & STEVEN CATON & HAMMAN. MD'S ECN TER
7899	- KATIE CARTER ALT CLC HRB OLG REC RING TER WLD WRA	6285	- JOSEPH CATTARIN ALT CLC TER WRA
10583	- PATRICK CARTER ALT CLC HRB RDS	7841	- VANESSA CATTARIN ALT CLC TBR WRA
3803	- ROLIN CARTER ALT CLC HRB OLG TER WLD WRA	6758	- DAVID CATTINGTON. ALT CLC HRB OLG REC RING TER WLD WRA
8495	- SHIRLEY CARTER ALT CLC ECN HRB OLG TER WLD WRA	822	- MICHAEL CAVAITT ECN TBR
7107	- ROSE CARUSO ALT CLC ECN OLG RING TER VIS WRA	11673	- DR & MRS D.M. CAVALLO CLC ECN FLE GEN H20 HRB LND OLG RING TBR TRL WLD
5860	- GREGORY CARVER ALT CLC HRB OLG REC RING TER WLD WRA	5652	- FRED C CAYOLE ALT CLC HRE OLG REC RING TBR WLD WRA
3493	- JULIE S. CARVILLE ALT CLC ECN H20 HRB REC RING SIA TBR WLD WRA	3481	- HARVEY & PHILLIS CEASAR CLC HRB
3496	- MICHAEL CARVILLE ALT CLC HRB RING TER WRA	7867	- WILLIAM CEDARHOLM ALT CLC HRB OLG REC RING TER WLD WRA
11080	- PHIL CARVILLE CLC ECN HRE TBR	5553	- STEVE CESEU ALT CLC HRB OLG REC RING TBR WLD WRA
249	- PHILIP P CARVILLE ECN GEN REC TER VIS	2716	- FRANK CELIO TBR
1523	- VELMOND CARY, JR TER	6853	- THERESAS CELTI CLCTBR
9726	- VIVIAN CASADA ALT CLC HRB OLG REC RING TBR WLD WRA	10288	- KATHLEEN CMRY ALT CLC ECN TBR WRA
2513	- CARLOS E CASAGRANDE TBR	11533	- BILL CENTER ALT CLC HRB OLG REC TER VIS WRA
4774	- GENEVIEVE CASCANLA CLC OLG TBR WRA		
7734	- DEAN CASE ALT CLC HRB OLG REC RING TER WLD WRA		

11855	-	ROBIN CENTER HRB REC TBR WRA	5225	CARYN CHARPIER ALT CLC HRB OLG REC
2474	-	MRS LOUISE CERATES TBR		RNG TBR WLD WRA
9140	-	PETER J CERLES CLC HRB OLG TBR	5315	- CARYN CHARPIER ALT CLC HRB OLG REC
9784	-	GRETCHEN CERT ALT CLC TBR WRA		RNG TBR WLD WRA
8095	-	RICHARD CERTA ALT CLC HRB OLG REC	10118	- KIM CHARRON ALT CLC ECN OLG RNG TBR
		RNG TBR WLD WRA		VIS WRA
4586	-	GINA CESARINI CLC	8343	- S E CHARTER ALT CLC HRB OLG TBR WLD
7996	-	RUSSELL CESKEW ALT CLC HRB OLG REC		WRA
		RNG TBR WLD WRA	743	- CLAYTON E CHASE ALTGEN
5895	-	FERNANDO CHACEY ALT CLC ECN OLG RNG	1525	- CLIFFORD CHASE TBR
		TBR VIS WRA	8623	- MARK CHASS ALT CLC ECN OLG RNG TBR
2934	-	BETTY CHADWICK CLC HRB RDS TBR		VIS WRA
3924	-	BETTY CHADWICK CLC HRB RDS TBR	10809	- SAURAU CHATTERJEE TBR
1884	-	CHRIS CHAFE CLC ECN HRB RDS TBR WLD	8778	- GABE CHAVEZ ALT CLC ECN OLG RNG TBR
4148	-	AMANDA CHAGI ALT CLC HRB OLG REC RNG		VIS WRA
		TBR WLD WRA	1259	- ROBERT W CHEESEWRIGHT REC
6443	-	MARY CHAKGRAN ALT CLC ECN OLG RNG	7435	- JAMES CHELOSS ALT CLC HRB OLG REC
		TBR VIS WRA		RNG TBR WLD WRA
3233	-	JEAN CHAMBERLAIN ALT CLC HRB OLG TBR	7294	- RUOPING CHEN ALT CLC TBR WRA
		WLD WRA	5992	- MADELINE CHENEY ALT CLC HRB OLG REC
3935	-	JEAN CHAMBERLAIN ALT CLC HRB OLG REC		RNG TBR WLD WRA
		TBR WLD WRA	8989	- HWA CHENG CLC RNG TBR WLD
2395	-	TOM CHAMBERS ALT CLC HRB OLG WRA	1563	- JULIE A CHEOMAN GEN REC
8665	-	TORA CHAMBERS CLC ECN HRB TBR	9254	- JAYNE CHERRY CLC HRB
1764	-	WAYNE F CHAMBERS TBR	4506	- MRS D A CHERRY CLC
6853	-	RICK CHAMPION CLC TBR	3870	- ROBERT CHESNEY H20 LND OLG VIS WLD
10810	-	JOHNCHAN CLC		WRA
167	-	JANET C CHANCLER CLC TBR	6346	- ROBERT CHESNEY REC WSR
417	-	BEATRICE K CHANDLER CLC RDS TBR TRL	7897	- ROBERT CHESNEY ALT CLC HRB OLG REC
127	-	DANIEL CHANDLER OLG TBR		RNG TBR WLD WRA
10605	-	HAROLD T CHANDLER CLC H20 HRB REC	6853	- RALPH PATRICK CHESTAIN CLC TBR
		TBR VIS	4	- SIMMA CHESTER CLC
12248	-	CYNTHIA CHANDLERHOVEN CLC ECN OLG	9089	- DEREK CHEWER ALT CLC TBR WRA
		TBR WRA	1471	- LYNN CHIAI ELLA CLC ECN HRB TBR
7995	-	SARA CHANDO ALT CLC HRB OLG REC RNG	5790	- MARK CHICHESTER ALT CLC HRB OLG REC
		TBR WLD WRA		RNG TBR WLD WRA
539	-	BRAD CHANEY ECN GEN TBR	5138	- TRACY CHIGAS ALT CLC HRB OLG REC RNG
1314	-	JEANETTE CHANEY TBR		TBR WLD WRA
6083	-	CONSTANTINA CHANIS ALT CLC ECN OLG	876	- CARY CHILDERS ECN REC TBR
		RNG TBR VIS WRA	2998	- IVY CHILDS ALT CLC HRB OLG TBR WLD
4159	-	JOHN CHAPIK TBR		WRA
10068	-	DEBORA CHAPMAN ALT CLC ECN OLG RNG	3287	- LAUREN CHILDS ALT CLC DRT HRB OLG TBR
		TBR VIS WRA		WLD WRA
11570	-	MRS ALLAN CHAPMAN CLC GEN WRA	2994	- MARK C CHILDS ALT CLC HRB OLG TBR
581	-	CHAPMAN CHEMICAL CO TONY GEORGE		WLD WRA
		ECN TBR	2226	- LETIZIA CHIN ALT CLC FLE HRB OLG TBR
1777	-	JERRY CHAPPELLE TBR		WLD WRA
3357	-	ED CHAPPMANN ALTTBR	748	- EVERETT CHITTENDEN GEN TBR
8527	-	CUFF CHAR, JR ALT CLC HRB OLG REC	4468	- KATHERINE CHMURA CLC ECN TBR WIN
		RNG TBR WLD WRA		WRA
6195	-	KEN CHARAMUGA ALT CLC TBR WRA	4587	- LISA CHOW CLC TBR
10334	-	JACQUES CHAREST ALT CLC ECN OLG RNG	4w5	- YVONNE CHOY CLC HRB TBR
		TBR VIS WRA	8628	- YVONNE CHOY CLC OLG TRL
1502	-	PATRICIA CHARGIN ALT CLC ECN FSH	7188	- MICHAEL CHRICKEN ALT CLC TBR WRA
3520	-	G CHARINTON REC	1653	- JULIE CHRISTENSEN CLC WSR
4784	-	ELIOSE CHARLTE CLC OLG TBR WRA	2481	- PAMELA LOU CHRISTENSEN ALT ECN GEN
2350	-	HALE CHARLTON GEN TBR	1662	- SONJA CHRISTENSEN WSR
3450	-	L CHARLTON CLC ECN FSH HRB TBR	9269	- TINA CHRISTENSEN CLC
8496	-	GRACE CHARMEY CLC ECN HRB TBR VIS	715	- IOLA CHRISTENSON ECN
		WRA	714	- LEROY CHRISTENSON ECN RDS TBR
9587	-	RICHARD CHARNLAY CLC ECN HRB TBR VIS	3500	- A C CHRISTIAN CLCTBR
		WRA	9236	- CAROL & LARRY CHRISTIAN REC
3449	-	GEORGE CHARNOCK CLC FSH HRB TBR	2691	- WALTER H CHRISTIANSEN TBR
8438	-	FAYETTE CHARONNAT CLC HRB RDS TBR	2710	- JEROME CHRISTMAN CLC HRB REC
8722	-	MARC W CHARONNAT ALT CLC ECN HRB	10726	- JEROME CHRISTMAN ALT CLC HRB OLG TBR
		RDS		WLD WRA
4804	-	NOELT CHARONNAT ALT CLC GEN OLG	5381	- LARRY CHRISTMAN ALT CLC ECN OLG RNG
		RDS REC TBR		TBR VIS WRA

10058	- TINA T. CHRISTOKES. ALT CLC ECN OLG RNG TBR VIS WRA	6855	- JAMES G. CLAY ALT CLC H2O REC TBR WLD
10223	- DAVID CHRISTY. ALT CLC TER WRA	329	- CARLYN CLAYBAUGH CLC
7083	- JULIE CHROMAN ALT CLC ECN HRB OLG RNG TBR VIS WRA	10894	- CLAYTEN HRBWRA
905	- JULIE A CHROMAN CLC GEN HRB TBR TRL VIS WIN	5841	- CLAYTON CLC HRE RDS
4486	- THEAS CHROMAN. ALT CLC ECN OLG RNG TBR VIS WRA	5841	- CAROL CLAYTON ALT CLC HRE OLG REC RNG TBR WLD WRA
3810	- JEFF CHRONEA. ALT CLC HRB OLG TBR WLD WRA	3319	- GLORIA CLAYTON CLC FSH HRB TBR
2749	- ANTOINETTE CHUBB. CLC TER WLD	3839	- SHERRY CLAYTON CLC HRB
9813	- GEORGE CHUCK. CLC GEN OLG TBR WRA	10662	- DENNIS CLEALMAN. ALT CLC ECN OLG REC RNG TBR VIS WRA
10200	- JEFFREY S CHUNN. ALT CLC TBR WRA	6853	- ELISABETH CLEAR. CLC TER
5744	- FIDELLA J CHURCH ALT GEN LND RNG WRA	243	- CLEARWATER CLC WRA
11243	- FIDELLA L CHURCH LND RNG TBR WRA	1704	- CLEARWATER. CLC ECN HRB TBR VIS WRA
209	- ROBERT W CHURCH. CLC ECN H2O LND RDS RNG TBR	9039	- CLEARWATER. ALT CLC HRE OLG REC RNG TBR WLD WRA
7376	- CHURCH OF ZEN. CLC OLG TBR WRA	5838	- DIANA CLEMENS. ALT CLC HRB OLG REC RNG TBR WLD WRA
911	- RICHARD L. CHUYZO. FSH GEN TRL WLD	254	- ALISON L CLEMENT. CLC OLG TER WRA
8684	- HARRIET CICCONE ALT CLC ECN OLG RNG TBR VIS WLD WRA	8411	- EUGENE CLEMENTS CLC HRB
1769	- SUSAN CICOJNI CLC RDS RNG TBR	883	- G A CLEMO ECN TBR
9049	- BARBARA CIETY. ALT CLC ECN HRB OLG REC RNG TER WLD WRA	880	- RAYMOND M CLEMO ECN TBR
6015	- VINCENT CINIDA ALT CLC ECN OLG RNG TBR VIS WRA	8477	- OALEB CLEVENGER CLC TBR
6853	- SANDY CIONDER CLC TBR	5555	- KIMA CLIE ALT CLC HRB OLG REC RNG TBR WLD WRA
6855	- PATRICIA CIPER. ALT CLC H2O REC TBR WLD	5779	- SIDNEY W. CLIFORD ALT CLC HRB OLG REC RNG TER WLD WRA
10030	- SERENA CLABO CLC GEN HRB TBR	6211	- CECIL CLIFTON. ALT CLC ECN OLG RNG TER VIS WRA
7017	- RONALD J CLALL. ALT CLC TBR WRA	11764	- DAVIE CLIFTON TBR
6966	- BOB CLAMPITT. ALT CLC HRB OLG REC RNG TBR WLD WRA	5167	- FRANCES CLIFTON ALT CLC ECN OLG RNG TBR VIS WRA
3351	- KR. CLARINGBULL. REC	2823	- JUDY CLIFTON CLC FSH HRB TER
4789	- ANNA CLARK CLC OLG TBR WRA	386	- JOHN W. CLIHILL. TER
9451	- BRIAN CLARK ALT CLC HRB OLG REC RNG TBR WLD WRA	7129	- JAMES CLINE ALT CLC ECN OLG RNG TBR VIS WRA
2030	- DON CLARK ALT ECN GEN	8395	- JACK CLODDING. CLC TBR
1196	- DORIS H CLARK CLC RDS WRA	2565	- GAIL CLOOK CLC
2610	- ELIZABETH CLARK. CLC HRB OLG ADS TBR VIS	5950	- GAIL CLOOK ALT CLC ECN OLG RNG TBR VIS WRA
1850	- GLADYS & WILLIAM CLARK. TBR	6426	- JOHN CLOSE ALT CLC ECN OLG RNG TBR VIS WRA
6413	- HARMONY CLARK. ALT CLC ECN OLG REC RNG TBR VIS WRA	1060	- GEORGE CLOUD ECN REC TBR
9775	- J CLARK ALT CLC TBR WRA	979	- NICK CLOUD CLC ECN TBR
6773	- JANICE CLARK ALT CLC HRB OLG REC RNG TBR WLD WRA	605	- RICK H CLOUD. TER
7449	- JOSEPH CLARK. ALT CLC ECN OLG RNG TER VIS WRA	3734	- ERIC CLOUGH CLC TBR WRA
9781	- JOSEPH CLARK. ALT CLC TER WRA	11073	- CLOVER LOGGING HALE CHARLTON ECN OWL TBR WRA
4659	- JULIA CLARK. ALT CLC TER WRA	1562	- CLOVER LOGGING CO JIM MCCOLLUM ECN GEN
7378	- JULIET CLARK CLC OLG TER WRA	11277	- RONCLOW CLC
10700	- JULIET CLARK CLC FLE OLG TBR WRA	1730	- RONALD J CLOW CLC ECN HRB TBR VIS WRA
6777	- KERRIE CLARK. ALT CLC HRB OLG REC RNG TBR WLD WRA	20500	- MARJORIE CLUCHALS TRL
7388	- MATHEW CLARK CLC GEN OLG TER WRA	7348	- VALERIE E COAKLEY. ALT CLC TBR WRA
7561	- PHIL CLARK ALT CLC ECN OLG RNG TBR VIS WRA	4289	- CONNIE COALE ALT CLC ECN OLG RNG TBR VIS WRA
3231	- RICHARD CLARK ECN	9426	- TRAVIS COATES ALT CLC ECN OLG RNG TBR VIS WRA
6319	- RUTH L CLARK ALT CLC HRB OLG TBR WLD WRA	6294	- BONNIE COB. ALT CLC TBR WFA
8970	- THOMAS CLARK REC WRA	2047	- MARY COBDEN ALT CLC GEN HRB OLG TBR WLD WRA
11348	- THOMAS CLARK TBR	6098	- RICHARD H COBDEN, MD FSH REC
525	- R G CLARK M D CLC GEN RDS	4034	- DEEDEE M COBEN CLC ECN HRE TBR VIS WRA
806	- ARTHUR W. CLARKE. ECN GEN OWL	3696	- JOHN COBOURN ALT CLC HRE WRA WSR
9483	- CHRISTOPHER L CLARKE ALT CLC TBR WRA	3044	- JOHN COBURN ALT CLC HRE OLG RDS TER WLD WRA
2896	- FRED & JACKIE CLAUSSEN TBR	4365	- DANIEL COCCHE ALT CLC HAB OLG TBR WLD WRA
4487	- VERNA CLAWSON ALT CLC HRB OLG TBR WLD WRA		

938	- CHRIS & MARY COCHRAN CLC TBR VIS	5160	SANDIA COLERNAN ALT CLC ECN OLG RNG
6755	- DOUG COCHRAN ALT CLC HRB OLG REC		TBR VIS WRA
	RNG TBR WLD WRA	6689	ANITA COLEY ALT CLC ECN OLG RNG TBR
463	- EDNA COCHRAN GEN		VIS WRA
144	- G W R COCHRANE CLC ECN RDS REC RNG	2963	COLFAX HIGHWAY ASSN JOE LAFORTE ALT
	TBR TRL		CLC FLE HRB
8812	- RICHARD COCKE CLC FSH H2O HRB RDS	4027	PAUL COLLET CLC GEN HRB OWLTBR
	RL WIN WRA	7764	FRANCES COLLETT ALT CLC HRB OLG TBR
2795	- MARIETTA & EDWARD COCKRUM T H		WLD WRA
2503	- DAVID L COCKE CLC ECN FSH GEN HRB T	5179	PETER COLLIER ALT CLC ECN OLG RNG TBR
7339	- ELIZABETH COE T CLC TBR WRA		VIS WRA
5050	- HARVEY J. COELOO ALT CLC HRB OLG REC	3761	BILL & ROSALIE COLLINS ALT CLC HRB OLG
	RNG TBR WLD WRA		TBR WLD WRA
3793	- B COFFMAN ALT CLC HRB	3217	- BRENDA COLLINS ALT CLC HRB OLG TBR
71W	- BAFON COFFMAN ALT CLC DRT ECN HRB		WLD WRA
	OLG RNG TBR VIS WRA	7289	- DANIELS COLLINS ALT CLC TBR WRA
5753	- BARBRA COFFMAN ALT CLC HRB OLG REC	20506	- DICK COLLINS TBR
	RNG TBR WLD WRA	3500	- JOHN COLLINS CLC TBR
11448	- BARTON COFFMAN CLC H2O HRB OLG TBR	362	- KEVIN M COLLINS HSTTBR
	VIS	10488	- LYNN COLLINS ALT CLC TBR WRA
995	- BETTY COFFMAN CLC HRB	11321	- LYNN COLLINS CLC HRB WRA
1233	- ELEANOR J. & RALPH COFFMAN REC WIN	8234	- RANDY COLLINS CLC DRT FSH H2O HRB
5065	- KURT COFFMAN ALT CLC HRB OLG REC		OLG RDS RNG TBR WLD WRA
	RNG TBR WLD WRA	7117	- RICH COLLINS ALT CLC ECN OLG RNG TBR
3792	- R COFFMAN ALT CLC HRB TBR		VIS WRA
5756	- REBECCA COFFMAN ALT CLC HRB OLG REC	10880	- RITA M COLLINS CLC ECN HRB LND RDS
	RNG TBR WLD WRA		TBR VIS
146	- JAMES H COGAR CLC HRB OLG RDS TBR	11890	- RITA M COLLINS ECN TBR WRA
334	- JOE COHEE CLC GEN HRB RNG TBR WLD	5480	- SUZANNE COLLOPY ALT CLC ECN OLG RNG
8840	- JOSEPH L COHEE CLC HRB RNG WRA		TBR VIS WRA
2642	- PATRICIA COHEN ALT CLC HRB OLG TBR	3815	- MICHELE COLON ALT CLC HRB OLG TBR
	WLD WRA		WLD WRA
12247	- PATRICIA COHEN CLC OLG TBR WRA	10357	- WILLIAM COLVIN CLC
4338	- SAGE COHEN ECN HRB TBR	1779	- COLUMBIA HELICOPTERS, INC MAXMERLICH
10808	- SAGE COHEN ALT CLC HRB OLG REC RNG		TBR
	TBR WLD WRA	1687	- COLUMBIA PLYWOOD CORP MARK SLEZAK
7990	- CHRISTOPHER W COHERN ALT CLC HRB		RNG TBR
	OLG REC & BR WLD WRA	77	- MARIA COLVIN ALT CLC HRB RDS WRA
222	- RONA COHL CLC HRB WRA	11198	- MARIA COLVIN ALT CLC ECN OLG RNG TBR
1823	- JIM COKA REC TBR		VIS WRA
5096	- JOSEPH L COKIE ALT CLC HRB OLG REC	20459	- JOE & KATHERINE COLWELL GEN OLG REC
	RNG TBR WLD WRA		WIN
6853	- CATHERINE COLBERT CLC TBR	4472	- CHRISTINA COLYER CLC HRB TBR
11054	- IDA COLBERT ALT CLC ECN FSH H2O HRB	75	- NICK COLYER CLC ECN REC TBR
	SNP TBR TRL WLD WRA	196	- SUSAN M COLYER CLC HRB
10998	- IDA COLBERT ALT CLC ECN FSH H2O HRB	8859	- GARY COMAN ALT CLC ECN OLG RNG TBR
	SNP TBR TRL WLD WRA		VIS WRA
1532	- K C COLCEE ECN OLG	1302	- EDMOND A COMBATALODE CLC
9691	- R C COLCEE ALT CLC TBR WRA	6001	- CHRISTOPHER COMMINS ALT CLC HRB OLG
6920	- C FOL SONYA COLE CLC TBR WRA		REC RNG TBR WLD WRA
6919	- GLENN S COLI ALT CLC WRA	6803	- BASIL CONDEX HRB WRA
8868	- JANICE COLE ALT CLC HRB OLG TBR	10354	- CONDOR EXPLORATION COW R FREDEKING
	WRA		ALT GEN HRB LND RDS REC TBR TRL VIS
5401	- KIMBERLY COLE CLC	11509	- SCOTT M CONER CLC DRT HRB
3819	- NANCY COLE CLC	9074	- JON G CONG ALT CLC TBR WRA
8446	- AGNES & L COLE CLC	97w	- CRAIG CONLEE ALT CLC ECN OLG RNG TBR
6853	- BARBARA COLEMAN CLC TBR		VIS WRA
8418	- BRUCE COLEMAN CLC TBR	7697	- BRYON CONLEY ALT CLC TBR WRA
2017	- DONALD COLEMAN ALT ECN GEN	201	- ELEANN CONLEY CLC HRB WRA
7844	- FRANCES COLEMAN ALT CLC TBR WRA	3500	- JANET CONLEY CLC TBR
10750	- J S COLEMAN CLC H2O HRB REC TBR VIS	10243	- MICHAEL D CONLEY ALT CLC TBR WRA
6076	- JIM & JANEENE COLEMAN ALT CLC HRB	7165	- CATHERINE CONNELLY ALT CLC TBR WRA
	OLG TBR TRL WLD WRA	7816	- MIKE CONNELLY ALT CLC TBR WRA
2464	- LAWRENCE COLEMAN ALT ECN GEN	9590	- GAYLE E CONNER CLC
2975	- MARILYN COLEMAN CLC	7559	- KAREN F CONNER ALT CLC ECN OLG RNG
2004	- PATRICIA COLEMAN ALT ECN GEN		TBR VIS WRA
6461	- WARREN R COLEMAN CLC ECN	8754	- ELEANOR CONNICK ALT CLC HRB OLG REC
5068	- JOHN W COLEMAN, JR ALT CLC HRB OLG		RNG TBR WLD WRA
	REC RNG TBR WLD WRA		

6100	KIM CONNICK. ALT CLC TBR WRA	1341	- LYNN COOPER. CLC GEN H2O HRB OLG RDS
2675	CALVIN ONNIF. CLC FLE TBR		RECT TBR TRL VIS
6356	BARBARA CONF. ALT CLC HRB G REC	3516	- LYNN COOPER. CLC FLE H2O HRB REC TBR
	RNG TBR WLD WRA		WLD
4830	- CATHERINE ANN CONRAD. ALT CLC ECN	4768	- RANDY COOPER. CLC OLG TBR WRA
	OLG RNG TBR VIS WRA	1309	- STEVE COOPER. ALT CLC ECN HRE OLG REC
3014	- CHRIS CONRAD. ALT CLC HRB OLG OWL		TBR VIS WLD
	RNG TBR	10667	- JENNIFER COOPS. ALT CLC ECN OLG REC
8815	PAUL CONRAD. ALT CLC TBR TRL		RNG TBR VIS WRA
9153	WARREN CONRAD. ALT CLC ECN OLG REC	3508	- AARON COPEIAN. GEN
	RNG TBR VIS WRA	9461	- JERRY & SHELLY COPLEY. ALT CLC HRB
67W	HEIDI CONRATH. ALT CLC HRB OLG REC		OLG REC RNG TBR WLD WRA
	RNG TER WLD WRA	3910	- MR. & MRS. ROBERT COPLEY. CLC
9098	HEIDI CONRATH. ALT CLC TBR WRA	10708	- WINIFRED M. COPNER. ALT CLC TBR WRA
6853	CONSERVATION SOCIETY HERMITAGE ANN K.	6951	- BETTIE COPPS. ALT CLC HRE OLG REC RNG
	FOSTAR. CLC TBR		TBR WLD WRA
3972	VIRGINIA CONSTABLE. CLC RDS TBR	3240	- W E. COPREN. CLC
9657	- VICTORIA CONTENTE. ALT CLC TBR WRA	8543	- MARY M. CORBELL. ALT CLC ECN OLG RNG
4585	- BYRON CONTREOUS. CLC ECN		TBR VIS WRA
7869	- NANCY CONTRERAS. ALT CLC HRB OLG REC	8444	- LEE CORBETT. CLC
	RNG TBR WLD WRA	7834	- REBECCA CORBETT. ALT CLC TBR WRA
2579	- CONCEPTION R. CONTREREZ. TBR	6878	- EUGENET CORBIN. CLC
7562	- GRACE CONWAY. ALT CLC ECN OLG RNG	1113	- JULIA CORDELL. CLC
	TBR VIS WRA	11030	- ARMANDO CORDOBA. ALT CLC ECN FSH
734	MS. E R. CONWAY. ECN		H2O HRB SNP TBR TRL WLD WRA
8573	- ARNEY E. COOK. CLC GEN OLG TBR WRA	3702	- CORDOVA HOT SHOTS 4WD ROBERT WERN-
4063	- BARBARA COOK. ALT CLC HRB OLG		ER. ALT RDS TRL WRA
656	- CHUCK COOK. ECN TBR	9916	- TODD CORKERY. CLC GEN HRB TBR
3573	- DAVIS COOK. ALT CLC HRB OLG TBR WLD	4609	- DANA CORNEIA. ALT CLC TBR WRA
	WRA	10219	- RICHARD F. CORNELIUS. ALT CLC TER WRA
2441	- MARGIE COOK. ECN TBR WRA	3916	- JOHN CORNELL. CLC ECN HRB TER WRA
3051	- ROD COOK. TBR	2984	- JOHN ROBERT CORNELL. ALT CLC GEN HRB
11763	- ROD COOK. GEN TBR		LND RDS RNG TER WLD
3421	- ROSAMONDE COOK. CLC GEN HRB OLG TER	4015	- MARGERY CORNELL. ALT CLC ECN HRB OLG
7693	- ROSAMONDE COOK. ALT CLC OLG TBR WRA		REC RNG TBR WLD WRA
4284	- S L. COOK. CLC	4267	- MR & MRS. CORNET. REC WRA
10619	- SUE COOK. CLC H2O HRE REC TBR VIS	2602	- FLAVIS CORRAD. TBR
20049	- T. COOK. ECN TBR	20500	- SHARAL CORREA. TRL
8673	- TED C. COOK. CLC HRB TBR	10171	- BRIAN CORROLL. CLC OLG TBR
3400	- WALTER COOK. CLC TBR	9246	- ANITA CORUM. CLC ECN HRE REC VIS
8921	- CAROL COOKE. ALT CLC GEN HRE OLG REC	4463	- JAY CORY. ALT CLC FLE H2O HRE OLG OWL
	RNG TBR WLD WRA		RDS REC RNG TER TRL URB VIS WLD
6566	BEA COOLEY. ALT CLC RDS REC RNG TER	4462	- KIM CORY. ALT CLC GEN HRE LND RNG TER
	TRL WIN WSR		TRL URB
1443	- GENE COOLEY. CLC ECN GEN H2O OLG RDS	9050	- WILLIAM COSBY. ALT CLC HRB OLG REC
	RNA RNG TBR TRL WLD WRA		RNG TBR WLD WRA
9506	GLEN A. COOLEY. ALT CLC HRB TER WRA	9167	- KEN COSSAIRT. ALT CLC ECN OLG RNG TBR
9507	NATHALIE M. COOLEY. CLC HRB TBR WRA		VIS WRA
10428	MICHAEL COOMBS. CLC ECN HRB	9954	- MIKE COSSAU. CLC GEN HRB TER
717	DON COON. ECN TER	10100	- LINDA COSTA. ALT CLC ECN OLG RNG TBR
3509	MICHAEL COONAN. ALT CLC		VIS WRA
9749	BOB COONS. ALT CLC ECN OLG RNG TBR	2776	- MIGEL COSTALLOE. CLC TBR
	VIS WRA	2114	- THOMAS F. COSTEEL. ALT ECN
2262	BRENDA J. COOPER. ALT CLC GEN HRB OLG	5944	- JOHN COSTELLO. ALT
	TER WLD WRA	4016	- MR & MRS. RICHARD COSTELLO. CLC HRB
4811	C. DANA COOPER. ALT CLC HRB OLG REC		RDS WLD WRA
	RNG TBR WLD WRA	7232	- STEPHEN M. COTE. CLC HRB
5171	CATHY JO COOPER. ALT CLC ECN OLG RNG	3566	- STANLEY COTLETT. CLC GEN TER
	TBR VIS WRA	4792	- MATHAN COTTEN. ALT CLC HRB OLG TER
5747	DIANNE & CHUCK COOPER. ALT CLC HRB		VIS WLD WRA
	OLG TBR WLD WRA	6812	- ROBERT P. COTTER. OD. TBR
9864	DIANNE & CHUCK COOPER. ALT CLC HRB	6174	- R A. COTTER. PRES GEN TBR
	OLG TBR WLD WRA	8301	- MIKE COTTHEB. ALT CLC HRB OLG REC RNG
1683	DONNA M. COOPER. CLC		TER WLD WRA
4845	GEORGE COOPER. ALT CLC HRB OLG REC	9768	- CAROL COTTIN. CLC OLG TBR WRA
	RNG TBR WLD WRA	5475	- SHAWN COUCHMAN. ALT CLC ECN OLG RNG
5136	JONELLE COOPER. ALT CLC HRB OLG REC		TER VIS WRA
	RNG TBR WLD WRA		

2314	- CATHERINE COULTER CLC GEN HRB RDS	2811	- JOHN CRANE ECNTBR
7564	- GEORGIA A COULTER ALT CLC ECN OLG RNG TER VIS WRA	2064	- NANCY F CRANE VIS
6063	- WONNE COURTAY ALT CLC ECN OLG RNG TER TRL VIS WRA	3012	- ROBERT CRANE RDS TER WRA
12038	- GEORGE COURTEMANCHE, JR ALT TBR	4192	- STEVE CRANE ALT ECNTBR
9514	- DEBRA COURTNEY ALT CLC HRE OLG TER WLD WRA	4274	- WES CRANE TBR
12238	- DEBRA COURTNEY ALT CLC ECN OLG RNG TBR VIS WRA	3011	- CRANE MILLS HAROLD CRANE ECN GEN OWL TBR
10362	- TOBY COURTRIGHT CLC HRB	9873	- VAEDA L CRANFILL ALT CLC HRB OLG TBR WLD WRA
6853	- RAYMOND COURTROGH CLC TBR	638	- JOANNE CRAPELLA ALT CLC HRE OLG RNG TBR TRL VIS WIN
6853	- DONNA COURTRIGHT CLC TER	5845	- JOE CRAVEN ALT CLC HRB OLG REC RNG TBR WLD WRA
6029	- MARGUERITE COVERT ALT CLC ECN OLG RNG TBR VIS WRA	3004	- KEN CRAWFORD CLC ECN HRB TBR VIS WRA
6626	- DR & MRS DENNISM COWALLO CLC FLE GEN H20 HRB OWL RDS RNG TBR TRL WLD WRA	8942	- KEN CRAWFORD ALT CLC HRB OLG REC RNG TER WLD WRA
3669	- TED & LIS COWDEN ALT CLC HRB OLG TBR WLD WRA	6549	- LAJAN CRAWFORD ALT CLC HRE OLG REC RNG TBR VIS WLD WRA
1559	- RUSSELL COWELL ECN RECTBR	693	- MARK CRAWFORD ALT ECNTBR
3800	- RUTH COWELL CLC FLE HRB RDS REC TBR WRA	4559	- NEWT CRAWFORD ALT CLC H20 HRB REC WLD WRA
4848	- STEPHEN P COWICE ALT CLC HRE OLG REC RNG TER WLD WRA	10338	- JEANNE M CRAWLEY ALT CLC ECN OLG RNG TBR VIS WRA
8697	- JANET COWNA ALT CLC ECN OLG RNG TBR VIS WRA	6385	- SHARON CRAWSON ALT CLC ECN OLG RNG TBR VIS WRA
2915	- ALLISON A COX TER	8218	- KATHLEEN CREANZA VIS
1032	- BILL COX CLC H20 HRB TBR TRL WLD	5180	- JEAN L CREASEY ALT CLC ECN OLG RNG TBR VIS WRA
8943	- BILL COX ALT CLC HRE OLG REC RNG TBR WLD WRA	1106	- JON CREEK ALT CLC
11334	- HARVEY L COX GEN	7624	- THERESA CREESY ALT CLC TBR WRA
7825	- KATHLEEN COX ALT CLC TER WRA	458	- PHIL CRENSHAW ECN TBR
9334	- MR & MRS HAROLD COX CLC H20 HRB RECTBR VIS	4604	- VICKI CRESITELLI ALT CLC GEN TBR WRA
1785	- VALERIE COX CLC	3333	- EVELYN CRESS CLC GEN TBR VIS WLD
3400	- ROBERT & REBECCA COYHENDELL CLC TBR	3834	- EVELYN CRESS CLC TBR
364	- PETER COYOTE ALT CLC ECN HRB OLG RNG TBR WRA	921	- WARREN K CRESSWELL ECN TBR
10973	- CHERYL COZAD ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA	9886	- SHAWN CRIMMINS DRT ECN H20
6401	- SUSAN COZIAH ALT CLC ECN HRB OLG RNG TBR VIS WRA	2540	- VIRGINIA CRINNION VIS
4516	- CHARLES COZZALIO RNG	8376	- GAIL M CRIPPEN ALT CLC HRE OLG REC RNG TBR WLD WRA
11395	- CP&M CASCADE RICHARD H MORSETH GEN TBR	1715	- CRITO CLC ECN HRE TBR VIS WRA
2183	- BOBBY CRAFT CLC REC TBR	3977	- VIRGINIA & KEN CRITTENDEN CLC ECN HRB
4194	- JOAN CRAIG ALT CLC HRB OLG REC RNG TBR WLD WRA	918	- SCOTT E CRIZER FSH GEN TRL WLD
8753	- LILLY CRAIG ALT CLC HRE OLG REC RNG TER WLD WRA	5761	- MICHELL CROCKETT ALT CLC HRB OLG REC RNG TER WLD WRA
7645	- PAUL CRAIG ALT CLC TBR WRA	8717	- MARI & RUSS CROCO ALT CLC TRL WRA
5601	- DAVE CRAIGEN ALT CLC HRE OLG REC RNG TER WLD WRA	6821	- SUSAN M CROMER CLC HRB RNG TBR WIN
10840	- KEVIN P CRALLE TER	6599	- LESLIE CROMPE ALT CLC ECN OLG RNG TBR VIS WRA
10842	- KIMBERLY CRALLE REC TBR	9826	- JASSIE CROMWELL CLC OLG TBR WRA
1a572	- MILLE CRALLE ECN	2761	- ANDREACRONE CLC
5556	- CRAMFUS ALT CLC HRB OLG REC RNG TER WLD WRA	173	- RAMONA & WILLIAM CROOKS CLC H20 OLG TBR WRA
930	- FRED CRANDALL TER	4599	- CHRISTA CROSBY CLC GEN HRB
4691	- JOHN CRANDALL ALT CLC TBR WRA	2171	- KATHY CROSEY CLC H20 HRB OLG RDS REC RNG TER TRL WRA
6335	- E JANE CRANE ALT CLC HRB OLG TBR WLD WRA	594	- MISHA CROSBY CLC HRB REC TBR TRL WLD WRA
6039	- ISABEL CRANE ALT CLC ECN OLG RNG TBR VIS WRA	5311	- ROB CROSBY ALT CLC HRB OLG REC RNG TBR WLD WRA
		3127	- WILLIAM CROSHY ALT CLC HRB TER
		1905	- DWAIN CROSS TBR
		4945	- KRISTINE M CROSS ALT CLC ECN OLG RNG TER VIS WRA
		10066	- LAURA CROSS ALT CLC ECN OLG RNG TBR VIS WRA
		1568	- LELANDA CROSS TBRWRA
		6448	- MIKE CROSS ALT CLC ECN GEN OLG RNG TBR VIS WRA

10907	- NELCHA CROSS & KRZYZTOF PIWOWANSKI' CLC H2O LND OLG RDS REC RNG TBR WLD	10510	- CHRIS CURTIS' CLC TBR WSR
10964	- JULIE CROSS' ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	1347	- FRANK B CURTIS CLC FLE GEN HRB
7276	- ERICA CROWELL' ALT CLC TBR WRA	11177	- JOHN W CURTIS CLC DRT TRL VIS
10345	- GINA & CHARLES CROWELL GEN	512	- KATHLEEN CURTIS CLC OLG WRA
2085	- JAMES L CROWELL ECN GEN	3046	- KATHLEEN CURTIS ALT CLC HRB OLG TBR WLD WRA
4759	- MARC CROWLEY' CLC TBR	11071	- KATHLEEN CURTIS CLC OLG RDS TBR
6829	- VAN K. & ANN LANIGAN CROZIER ALT CLC ECN REC TBR	9286	- LOUISE CURTIS CLC
4386	- WILLIAM & GAIL CRUIT' ALT CLC ECN HRB OLG TBR WLD WRA	5042	- MICHELLE CURTIS ALT CLC ECN OLG RNG TBR VIS WRA
2615	- CHARLES CRUMB TBR	9063	- WENDY CURTIS ALT CLC TBR WRA
3286	- MR. & MRS. F. CRUMPLEY CLC H2O LND RDS RNG TBR WLD	1362	- DEBORAH & GUNNER CURTIS & FREITAG CLC TRL WRA
3930	- MR & MRS F CRUMPLEY. CLC H2O HRB LND RDS RNG TBR WLD	5149	- KIM CURWICK ALT CLC HRB OLG REC RNG TBR WLD WRA
5264	- JANE CRUSER ALT CLC ECN OLG RNG TBR VIS WRA	5238	- KIM CURWICK ALT CLC HRB OLG REC RNG TBR WLD WRA
10170	- CHARLES CRUZ GEN	2177	- MR & MRS. I CUSHMAN CLC TBR
375	- FRANK CRUZEN CLC TBR	1431	- TOM CUSTER ALT CLC HRB RDS RNG TBR
11132	- FRANK CRUZEN CLC ECN HRB REC TBR	9887	- AARON CUSTINO TBR WLD
7345	- DAN CUCIMOTHS. ALT CLC TBR WRA	5655	- STU CUTT ALT CLC HRB OLG REC RNG TBR WLD WRA
7344	- SHARON CUCIMOTHS. ALT CLC TBR WRA	8422	- BETTY B CUITEN CLC REC TRL
11081	- GARY CUDWORTH ALT ECN FSH REC TRL VIS	6823	- MERRITT E CUTTEN ALT CLC REC TBR
10035	- LINDA CULBERTSON CLC GEN HRB TBR	7533	- CHARLOTTE CUTTER ALT CLC HRB OLG REC RNG TBR WLD WRA
5840	- BRENDA CULINS' ALT CLC HRB OLG REC RNG TBR WLD WRA	9696	- BERA MARIE CUZ' ALT CLC TBR WRA
3371	- CATHERINE CULLIHANE ALT CLC HRB OLG TBR WLD WRA	5857	- JOHN CYPHER ALT CLC HRB OLG REC RNG TBR WLD WRA
11246	- JERRY CULVER' GEN WRA	5150	- RON OLIVER CYSTER' ALT CLC ECN OLG RNG TBR VIS WRA
9639	- USA CULVER. ALT CLC TBR WRA	2381	- D STAKE MILL INC ROBERT HARRIS, PRES TBR
9103	- CAROL CUMES ALT CLC ECN OLG RNG TBR VIS WRA	2381	- D STAKE MILL INC DARREL HARRIS, SALES MGR, TBR
9229	- LOIS A CUMMINGS CLC H2O HRB REC TBR VIS	2381	- D STAKE MILL INC DOUGLAS LUNDMARK, CHAIRMAN TBR
7611	- VALERIE CUMMINGS. ALT CLC TBR WRA	1347	- CATHY D'AMBROSIO CLC FLE GEN HRB
10968	- WENDY CUMMINGS' ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	907	- DENISE D'ANNE WSR
5810	- MICHAEL CUMMISKEY' ALT CLC ECN OLG RNG TBR VIS WRA	112	- MAY D'MARIE CLC ECN HRB TBR
10638	- CHRISTINE L CUNHA' CLC H2O HRB REC TBR VIS	6853	- MAY D'MARIE CLC TBR
2954	- JASON C. CUNNINGHAM' GEN	5113	- CONNIE DACHE. ALT CLC HRB OLG REC RNG TBR WLD WRA
5007	- MARY CUNNINGHAM' HRB TBR	5826	- DON DACHTLER ALT CLC HRB OLG REC RNG TBR WLD WRA
5681	- BOOHN PEEZ CUPLA' ALT CLC HRB OLG REC RNG TBR WLD WRA	6724	- DONALD DACHTLER ALT CLC
4434	- HERBERT CURMAN' TBR	5618	- MAYA DACHTLER ALT CLC HRB OLG REC RGTBR WLD WRA
5557	- CHARLES CURNAGH ALT CLC HRB OLG REC RNG TBR WLD WRA	5616	- NAT DACHTLER ALT CLC HRB OLG REC RNG TBR WLD WRA
4105	- LAYNE CURNUTT, DDS. ALT CLC HRB OLG REC RNG TBR WLD WRA	1731	- SHELLEY DACHTLER CLC ECN HRB TBR VIS WRA
10335	- STEVEN CURR' ALT CLC ECN OLG RNG TBR VIS WRA	5617	- SHELLEY DACHTLER ALT CLC HRB OLG REC RNG TBR WLD WRA
11509	- PAT CURRAN CLC DRT HRB	11234	- SHELLEY DACHTLER CLC OLG TBR WLD
5531	- TIMOTHY CURRAN ALT CLC TBR WRA	4398	- MARGARET DACK CLC TBR VIS
8545	- KATE CURREY' ALT CLC ECN OLG REC RNG TBR VIS WRA	9779	- CHAD DADA ALT CLC TBR WRA
8912	- KATE CURREY. ALT CLC ECN OLG RNG TBR VIS WRA	3500	- MARIE DAG CLC TBR
3238	- CIRA MARIE CURRI. ALT CLC ECN FSH OLG TBR WLD	9412	- CLAYTON DAGGETT, ALT CLC ECN OLG RNG TBR VIS WRA
11137	- DAN CURRY. GEN TBR	9413	- DANIELLE DAGGETT' ALT CLC ECN OLG RNG TBR VIS WRA
9584	- DON CURRY. ALT CLC GEN HRB REC RNG TBR WIN	1600	- VERONICA DAGGETT CLC HRB RNG TBR VIS WRA
6035	- MARIANNE CURRY ALT CLC ECN OLG RNG TBR VIS WRA	3150	- NANCY DAGLE CLC HRB
		3729	- CHRISTINE DAGOSTINI' ALT CLC HRB OLG TBR WLD WRA

3150	DAN DAHL CLC HRE	11110	. GEETA DARDICK CLC GEN TER VIS
3350	JULIE DAHL' CLC HRE	374	. SAM DARDICK CLC HRE REC TER
6666	BEVERLY DAHLE ALT CLC ECN OLG RNG	4580	. JAMES DARLEY ALT CLC
	TER VIS WRA	3904	. JEANNE DARLING ALT CLC ECN OLG RNG
8450	- RICHARD M. DAHLHAUSEN ALT CLC HRB		TER VIS WRA
	OLG TBR WLD WRA	10997	. JIM DARMONT. ALT CLC ECN FSH H2O HRB
8750	- JO HANNA DAIKOWSKI ALT CLC ECN OLG		SNP TER TRL WLD WRA
	RNG TER VIS WLD WRA	8732	. LEE DARRAH, M D CLCFSH
8022	- JIM DAILEY ALT CLC ECN GEN OLG RNG	7162	. MICHAEL ALLEN DARRELL ALT CLC TER WRA
	TER VIS WRA	3791	. HILARY DART ALT CLC ECN OLG RNG TER
8021	- SHARYLA DAILEY' ALT CLC ECN GEN OLG		VIS WRA
	RNG TER VIS WRA	1452	. GARY DARULA CLC OLG REC TRL
11301	- NED & JANIS DAIRIKI, GEN REC	1058	. PEGGY DASILVA ALT RDS RNG TBR
4272	- GRETCHEN DAKIN CLC OLG RDS TER	3369	. RAYMOND DASMANN ALT CLC HRE OLG TBR
11405	- GRETCHEN DAKIN ALT CLC OLG RDS TBR		WLD WRA
4493	- VERGILLA DAKIN ALT CLC GEN HRE OLG	25	. THIA DASS. ALT CLC GEN H2O HRB RDS REC
	REC RNG TER WLD WRA		RNA RNG SIA TER TRL WLD WRA
2695	- WILLARD DAKIN CLC HRE TER WRA	3540	. THIA DASS SIA TBR VIS WRA
11401	- WILLARD DAKIN ALT CLC HRE TBR	9037	. TINA DASS ALT CLC HRB OLG REC RNG TBR
1347	- FRED DALEY CLC FLE GEN HRE		WLD WRA
7434	- SIMONE DALLUGGE ALT CLC HRE OLG REC	5942	. JULIE L DATU CLC HRB HSTTER VIS
	RNG TER WLD WRA	10982	. JOAN DAUGHERTY ALT CLC ECN FSH H2O
11973	- WILLIAM DALONZO CLC		HRB SNP TER TRL WLD WRA
4898	- CHRIS DALPAGETTI' ALT CLC HRE OLG REC	5323	. KYLE DAUGHTERTY ALT CLC HRB OLG REC
	RNG TBR WLD WRA		RNG TER WLD WRA
10138	- MARTIN DALPEZ' ALT CLC ECN OLG RNG	6107	. CATHERINE DAUGHTERY ALT CLC TER WRA
	TER VIS WRA	8460	. DAVID P DAULPRAVE ALT CLC ECN OLG
722	- JOEL & BEVERLY DALPORTO GEN TBR		RNG TBR VIS WRA
8686	- ELEANOR DALTON, CLC H2O HRE REC TER	4414	. JON DAUNT OLG
	VIS	4565	. JON DAUNT CLC ECN TER
4244	- ROBERT DALTON OLG RDS REC WRA	4983	. JON DAUNT CLC HRB OLG TER WRA
8391	- SANDARA DALTON ALT CLC HRE OLG REC	125	. JONATHAN DAUNT CLC TBR
	RNG TER WLD WRA	126	. JONATHAN DAUNT CLC ECN RNG TER WRA
3562	- JOHN DALY ALT CLC TER	2368	. JONATHAN DAUNT ALT CLC HRE TER WRA
9873	- LANA DALY ALT CLC HRB OLG TER WLD	3952	. JONATHAN DAUNT ALT CLC HRB TER WRA
	WRA		WSR
10586	- LANA DALY ALT CLC HRE OLG TER WLD	4125	. JONATHAN DAUNT ECN RNG
	WRA	4335	. JONATHAN DAUNT. CLC HRE TER WSR
5782	- LILLIAN M DALY ALT CLC HRE OLG HEC	4404	. JONATHAN DAUNT ALT CLC HRB OLG RDS
	RNG TER WLD WRA		TBR
7547	- MARY EYLES DALY ALT CLC ECN OLG RNG	4655	. JONATHAN DAUNT. ALT CLC TBR WRA
	TER VIS WRA	2270	. JONATHON DAUNT. RNG
8334	- MARK W DAM ALT CLC HRE OLG REC RNG	2498	. JONATHON DAUNT' CLC WSR
	TER WLD WRA	2971	. JONATHON DAUNT CLC H2O WRA WSR
3500	- BARBARA & FRANK DAMENCIAS CLC TER	4409	. MR & MRS JONATHAN DAUNT ALT CLC
11324	- DOMINIC & DONNA DAMICO CLC ECN FLE		HRE TBR WRA
	H2O OLG REC TER TRL VIS WLD WRA	3150	. GLENN DAUPHIN CLC HRE
9419	- JUDITH DAMICO ALT CLC ECN OLG RNG	3500	. THOMAS H. DAURS CLC TER
	TBR VIS WRA	1625	. DONALD W DAUTERMAN TBR
4056	- MR & MRS D DAMICO CLC FLE H2O LND	5270	. D DAVENPORT ALT CLC ECN OLG RNG TBR
	OLG RDS REC RNG TER TRL		VIS WRA
128	- DIANE DAMS & MIKE CHUD CLC DRT H2O	12149	. DOUG DAVENPORT TER
	TBR	6403	. ELLAN DAVENPORT ALT CLC HRB OLG REC
7213	- MICHEL & DANNY DANIEL ALT CLC HRE OLG		RNG TER WLD WRA
	REC RNG TER WLD WRA	5015	. ROSLIND DAVENPORT CLC ECN HRB TBR
2146	- JONATHAN DANIELS CLC		VIS WRA
694	- LESLIE H DANIELS OWL RDS REC TER VIS	4006	. IRENE DAVID ALT CLC HRE OLG TER
5000	- MICHAEL DANIELS CLC	3500	. BARBARA & LEAN DAVIDSON CLC TER
8631	- JASON T DANIELSON ECN HRE TER	9354	. BILL DAVIDSON ALT CLC HRE OLG REC RNG
3462	- TAD DANZ REC WRA		TER WLD WRA
8140	- LAURELDAPHNE AIR CLC ECN FLE H2O HRE	4073	. DALE DAVIDSON CLCECN HRB
	OLG REC RNG TER TRL VIS WLD WRA	3898	. DARIO DAVIDSON CLC GEN H2O HRB OLG
8139	- V DAPHNE CLC HRE OLG RDS TER WRA		TER WLD
9135	- RAY DAREY ALT CLC HRB OLG RDS TER	5493	. DAVID DAVIDSON ALT CLC HRE OLG REC
372	- GEETA DARDICK CLC RDS RNG TER TRL		RNG TER WLD WRA
4281	- GEETA DARDICK CLC HRE WRA	5985	. LEILA DAVIDSON ALT CLC HRE OLG REC
			RNG TER WLD WRA
		8906	. LEILE DAVIDSON ALT CLC ECN OLG REC
			RNG TER VIS WRA

4622	- MARY DAVIDSON: ALT E HRB TRL	1664	- ROBERT C. DAVIS REC
1565	- MATT HEW E DAVIDSON : E HR VIS	5534	- SEAN DAVIS. ALT CLC TBR WRA
3497	- PHYLIS DAVIDSON. A : G HRB RRG	9918	- TERI DAVIS. CLC GEN HRB TBR
	TBR VIS WLD WRA	794	- WESLY J DAVIS. TBR
2945	- SHARON DAVIDSSON. ALT CLC RDS TBR WLD	5443	- BEN DAVIS, JR ALT CLC HRB OLG REC RRG
5885	- IRENE DAVIES ALT CLC HRB OLG REC RRG		TBR WLD WRA
	TBR WLD WRA	9982	- BEN DAVIS, JR ALT CLC TBR WRA
946	- JOHN DAVIES DRT OLG RDS TBR WLD	10542	- LEN DAVIDSON CLC GEN HRB TBR
3150	- S. DAVIES CLC HRB	9261	- SCOTT DAVISON. CLC HRB
11003	- LEE DAVIES, JR. ALT CLC ECN FSH H2O HRB	10324	- LEN DAVISSON. ALT CLC HRB OLG REC RRG
	SNP TBR TRL WLD WRA		TBR WLD WRA
9901	- MACHAEL DAVILON CLC OLG TBR WRA	11716	- SHARON DAVISSON ALT CLC RDS TBR WLD
6475	- DAVIS CLC ECN HRB TBR	10319	- ROBERT DAW ALT CLC ECN OLG RRG TBR
785	- ANNETTE DAVIS. ECN TBR		VIS WRA
786	- BILLY RAY DAVIS ALT ECN OWL	2126	- KEN DAWDY CLC HRB
801	- BILLY RAY DAVIS ALT GEN TBR	1377	- MARGARET DAWSON GEN
1508	- BONNIE DAVIS. ECN GEN OWL REC TBR WLD	1376	- SHERMAN DAWSON ALT H2O OWL REC RNA
	WRA		TBR WLD WRA
1979	- CARMEN DAVIS CLC HRB	1578	- SHERMAN DAWSON ALT TBR VIS
3052	- CHARLES R DAVIS ECN	10984	- TERESA M DAWSON. ALT CLC ECN FSH H2O
6795	- CRAIG DAVIS. ALT CLC HRB OLG REC RRG		HRB SNP TBR TRL WLD WRA
	TBR WLD WRA	4249	- DENI, THOMAS & CASEY DAX' CLC ECN FLE
5852	- DAVIS DAVIS ALT CLC HRB OLG REC RRG		HRB OLG TBR VIS
	TBR WLD WRA	2732	- HENRY DAX CLCECNTBR
6300	- DOROTHY & DAVID DAVIS ALT CLC ECN HRB	11213	- HENRY DAX CLC TBR
	OLG RRG TBR VIS WRA	6771	- BOB DAY ALT CLC HRB OLG REC RRG TBR
3056	- EDYTH C. DAVIS. TBR WRA		WLD WRA
1555	EUGENE DAVIS. ECN TBR	4475	- DAVID DAY CLC DRT HRB
8397	GERRIE DAVIS. ALT CLC HRB OLG TBR WLD	4474	- LARK DAY CLC FLE HRB
	WRA	2342	- SYLVIA DAY ALT
7838	- ILANA E DAVIS ALT CLC TBR WRA	10364	- MARTHA L DAYS ALT CLC HRB RDS TBR
6793	- JACKIE DAVIS ALT CLC HRB OLG REC RRG	10560	- ADAM DAYS, BRIAN DETER. & TIM WILLEY
	TBR WLD WRA		CLC GEN HRB TBR
7846	- JAMES B. DAVIS ALT CLC TBR WRA	4843	- CHARLES DAYTON ALT CLC FLE HRB OLG
10265	- JANET DAVIS. ALT CLC TBR WRA		REC RRG TBR WLD WRA
2442	- JEANNE DAVIS. ECN	5682	- NEAL DAZIRMICH. ALT CLC HRB OLG REC
4698	- JEANNIE DAVIS CLC HRB		RRG TBR WLD WRA
3927	- JERRI DAVIS CLC HRB TBR	92	- MERLE DE LA CHE' CLC GEN H2O TBR
3002	- JERRI L DAVIS ALT CLC	5762	- JOHANNA RICK ALT CLC HRB OLG
5575	- JIM DAVIS ALT CLC ECN OLG RRG TBR VIS		REC RRG TBR WLD WRA
	WRA	9013	- JOHN DEADERICK ALT CLC ECN OLG RRG
8775	- JOCELYN DAVIS. ALT CLC ECN OLG RRG TBR		TBR VIS WRA
	VIS WRA	5446	- VIOLA M DEAL CLC H2O HRB REC TBR VIS
1949	- JOHN DAVIS. ALT	2184	- COURTNEY DEAN. CLC HRB
6707	- JOHN DAVIS REC RRG WRA	373	- LYNN DEAN' CLC TBR TRL VIS
9964	- JOHN DAVIS CLC GEN HRB TBR	5777	- MARGUENTE M DEAN ALT CLC HRB OLG
2494	- JOHN & PAMELA DAVIS CLC ECN FSH GEN		REC RRG TBR WLD WRA
	HRB REC TBR	6946	- MARY D DEAN ALT CLC TBR WRA
507	- JOHN R & TERI A DAVIS ALT CLC HRB REC	10162	- ROBIE DEANDA CLC
	RRG TBR WRA	7549	- S DEANE CLC OLG TBR WRA
1663	- LAURRAINE DAVIS CLC ECN HRB	6853	- SHARON DEANGELIS. CLC TBR
4038	- LAUREN DAVIS CLC LND OLG OWL RRG TBR	6853	- MRS. M JOYCE DEARING CLC TBR
	TRL VIS WLD	2509	- ROBERT DEEVER ALT CLC ECN TBR WLD
5924	- LAUREN DAVIS CLC OLG PLN RDS RNA TBR	10811	- JEANNETTE DEBAISE CLC OLG TBR WRA
	TRL WSR	4183	- BOB DEBOLT. CLC ECN TBR
232	- MARY ANNE DAVIS. CLC OLG	1251	- GERALD DECAMP CLC ECN HRB REC TBR
6305	- MATTHEW DAVIS. CLC H2O HRB TRL WRA		WRA
2444	- MICHAEL L. DAVIS TBR	2396	- KEN DECIO CLC ECN TBR
3411	- MRS A M DAVIS CLC	8793	- LAWRENCE DECKARD ALT CLC ECN OLG
3266	- PAT DAVIS ALT CLC HRB OLG REC RRG TBR		RRG TBR VIS WRA
	WLD WRA	8792	- SHIRLEY DECKARD ALT CLC ECN OLG RRG
3966	- PAT DAVIS ALT CLC HRB OLG REC RRG TBR		TBR VIS WRA
	WLD WRA	9540	- CHRISTOPHER J DECKER CLC HRB
9448	- RAYMOND DAVIS ALT CLC ECN OLG RRG	4157	- CLAUDE DECKER CLC OLG WRA
	TBR VIS WRA	1434	- DONALD DECKER ECN GEN OWL WRA
6355	- ROBERT DAVIS' ALT CLC HRB OLG REC RRG	4028	- WILLIAM & VIRGINIA DECKER CLC GEN HRB
	TBR WLD WRA		OLG RRG TBR

7036	- CAROLYN M DECLERCH ALT CLC TBR WRA	4536	- B DELL CLC
3893	- ELIZABETH DEEAJA ALT CLC HRB OLG TBR WLD WRA	3500	- GARYDELL CLCTBR
5867	- LAURA DEEM ALT CLC HRB OLG REC RNG TBR WLD WRA	3500	- WF DELL CLCTBR
9744	- GAIL DEETA ALT CLC ECN OLG RNG TBR VIS WRA	20456	- JOSEPH DELLASORTE HRB RDS TBR
2630	- D F DEFARNIS CLC	1865	- DELLEN WOOD PRODUCTS WILLIAM E LENTES ECN
2617	- SUSANNE DEFAZIO ALT CLC	10033	- HELEN DELLEERA CLC GEN HRB TBR
1615	- DEFENDERS OF WILDLIFE RICHARD SPOTTS CLC FSH H2O HRB OLG RDS TBR WLD WRA WSR	9533	- ANGIE DELOACH CLC TBR
4160	- DEFENDERS OF WILDLIFE RICHARD SPOTTS OLG RNG TBR	380	- BETH DELONG GEN TBR
6512	- JOHN DEFRANCE ALT CLC ECN OLG RNG TBR VIS WRA	5376	- NANCY DELONG ALT CLC ECN OLG RNG TBR VIS WRA
659	- ADAM DEFRANCO CLC GEN HRB OLG TRL VIS WRA	3500	- JEANETTE DELOZICK CLC TBR
6962	- ADAM DEFRANCO ALT CLC ECN OLG RNG TBR VIS WRA	1404	- DELTA SAND & GRAVEL CO JERRY A BOUCCOCK GENTER
11140	- ADAM DEFRANCO CLCWRA	11687	- A DELU CLC
9026	- ANNE DEI ALT CLC HRB OLG REC RNG TBR WLD WRA	118	- MS DARIEN N DELU TBR
6417	- SHAWN DEFRANCO ALT CLC ECN OLG RNG TBR VIS WRA	9845	- MARK DELUCHI ALT CLC ECN TBR WRA
6416	- WILLOW DEFRANCO ALT CLC ECN OLG RNG TBR VIS WRA	10938	- MARK DELUCHI ALT CLC ECN HRB TBR WRA
6410	- GENE DEFRANE ALT CLC ECN OLG RNG TBR VIS WRA	2988	- CHARLES DEMARANVILLE ALT CLC HRB TBR
9848	- STEFANE DEGENEGAN CLC ECN OLG TBR WRA	2997	- LAURIE DEMARANVILLE TBR
1224	- BEVERLY A DEGERO TBR WRA	5784	- LAURIE DEMARANVILLE ALT CLC HRB OLG REC RNG TBR WLD WRA
6779	- ALEX DEGRASSI ALT CLC HRB OLG REC RNG TBR WLD WRA	3634	- DWIGHT DEMAY CLC ECN REC VIS
10308	- MARLENE R. DEGROOD ALT CLC ECN OLG RNG TBR VIS WRA	1148	- KAREN DEMILLE ECN REC TBR
4680	- MICHAEL DEHEOCT ALT CLC TBR WRA	6007	- DOUG DEMIRELLI ALT CLC ECN OLG RNG TBR VIS WRA
3053	- H DEHOOP TBR	10439	- LACY DENEJ CLC H2O HRB REC TBR VIS
3059	- JEAN DEHOOP ECN TBR WLD	3656	- JOSEPH A & CYNTHIA DENICOLA & TURZE CLC ECN HRB TBR WRA
3055	- RICK DEHOOP TBR	2590	- RICHARD H DENISON ALT CLC
2413	- STEPHANIE DEHOOP ECN	557	- BURKE C DENIZ TBR
1490	- ENID G DEIBERT CLC TBR	796	- BURKE C DENIZ TBR
1536	- KEN DEIBERT, MA' CLC TBR WRA	677	- RYAN DENIZ GEN
9606	- STEVE DEINBERG ALT CLC TBR WRA	733	- RYAN DENIZ GEN
6853	- PHYLLIS DEINGBERGSORRICK CLC TBR	m 4	- IRMA J. DENNELL CLC H2O HRB REC TBR VIS
1669	- JOHN A DEISHER' ECN GEN	6906	- CATHERINE DENNES ALT CLC TBR WRA
9908	- CHUCK DEJORNETTE CLC WRA	3131	- D M DENNIS ALT CLC HRB OLG REC RNG TBR WLD WRA
5774	- JOSEPH DEKALE ALT CLC ECN OLG RNG TBR VIS WRA	10002	- JACKIE DENNIS CLC GEN HRB TBR
7667	- ROBERT DEKIES ALT CLC TBR WRA	8392	- DIANE DENNY ALT CLC HRB OLG TBR WLD WRA
5940	- MRS DA DEL MESE CLC	2516	- ELWYN DENNY ECN RDS TBR
3666	- DEL NORTE TAXPAYERS LG BILLAMBROSE, MGR ALT HRB	1428	- RAY DENNY TBR
11220	- ANN DELANEY CLC GENTBR	8643	- BART A DENNY ALT CLC HRB OLG REC TBR WLD WRA
9410	- R E DELANEY ALT CLC ECN OLG RNG TBR VIS WRA	8643	- ROBERT & BARBARA DENNY ALT CLC HRB OLG REC TBR WLD WRA
5791	- THERESA M DELANEY ALT CLC HRB OLG REC RNG TBR WLD WRA	4583	- GEROLDDENTON CLC
6853	- CHRIS DELANY CLC TBR	3022	- JANE DEMON ALT CLC H2O HRB RDS REC TBR VIS
6329	- PETER A DELAP WLD	3939	- JANE DENTON ALT CLC H2O HRB RDS TBR
1753	- MERLE DELAROCHE CLC ECN HRB TBR VIS WRA	9314	- KEVIN DENTON CLC H2O HRB REC TBR VIS
5133	- BRYAN DELBIANS ALT CLC HRB OLG REC RNG TBR WLD WRA	723	- PAUL R DEMON ECN OWLTBR WLD
4895	- SERENA DELGADO ALT CLC HRB OLG REC RNG TBR WLD WRA	7993	- SELMA BARROS DE OLIVEIRA ALT CLC HRB OLG REC RNG TBR WLD WRA
		5091	- TOM DEPAOLI ALT CLC ECN OLG RNG TBR VIS WRA
		9200	- BARBARA DEPAULI CLC H2O HRB REC TBR VIS
		4593	- GENE DEPELLO ALT
		4535	- H DEPELLO ALT CLC HRB OLG TBR WLD WRA
		5081	- KATHERINE DEPESA ALT CLC ECN OLG RNG TBR VIS WRA
		6453	- K DEPESU CLCHRB
		2688	- JOHN & MARY DEPONT TBR WLD
		4566	- KATHY DEPROSSE CLC ECN HRB TBR VIS WRA

363	- JEANNETTE DERADOORIAN' ALT CLC HRB RNG TBR WRA	3700	- U U Y DICKENS. CLC ECN HRB TBR VIS WRA
1684	- E M DERICCO GEN TBR	2584	- J DANETTE DICKERSON' ALT CLC HRB OLG REC RNG TBR WLD WRA
66	- ANTHONY J DERIGGI, MD.' CLC HRB TBR WRA	10441	- JEAN DICKINSEN' CLC H2O HRB REC TBR VIS
9996	- FRANN DEROOS. ALT CLC TBR WRA	7981	- SASHA DICKINSON' ALT CLC HRB OLG REC RNG TBR WLD WRA
6889	- JEANDERR REC	8326	- SASHA DICKINSON ALT CLC HRB OLG REC RNG TBR WLD WRA
1947	- LINDA DESAI' ALT CLC HRB RNG TBR WRA	5858	- PAM DICKISON' ALT CLC HRB OLG REC RNG TBR WLD WRA
6853	- DONALD COLE DESELMO CLC TBR	10735	- MARK DICKSON' ALT CLC TBR WRA
7432	- DONALD C DESKINS' ALT CLC HRB OLG REC RNG TBR WLD WRA	8299	- RANDI DICKSON' CLC ECN OLG TBR WRA
4827	- CAROLE DESRET' ALT CLC ECN OLG RNG TBR VIS WRA	9675	- JACQULYN DICHTER' ALT CLC TBR WRA
9716	- USA DESSEM ALT CLC ECN OLG RNG TBR VIS WRA	670	- DAN J DIEDERICH' CLC HRB TBR WRA WSR
4430	- STEVE DESSON ECN OWLTBR	8915	- VIRGINIA DIEHL' ALT CLC HRB OLG RDS REC RNG TBR WLD WRA
6712	- JULIE DESTOUBE LND RDS TBR WRA	1988	- RUTH DIENES' ALT ECN GEN
6714	- JULIE DESTOUBE. ALT CLC GEN HRB OLG TBR WLD WRA	7362	- TOBIAS DIENSTFREY' CLC OLG TBR WRA
1852	- LOUIS J DESTREE ECN GEN TBR	11093	- CLAY DIETRICH TBR
4816	- PATRICIA ANN DETAVERNIA' ALT CLC HRB OLG REC RNG TBR WLD WRA	857	- CLAYTON DIETRICH TBR
8061	- RANDY DETUCHI' ALT CLC TBR WRA	1157	- MRS M DIETRICH' ECN GEN LND TBR
639	- PETER M DETWILER. ALT TBR	5144	- CHRISTINA DIFELICE. ALT CLC HRB OLG REC RNG TBR WLD WRA
4385	- STEVEN DETWILER' ALT CLC	10541	- CHRISTINA DIFELICE' CLC GEN HRB TDR
2217	- WINIFRED DETWILER' ECN GEN H2O HRB TBR	5241	- MARGIE DIFELICE' ALT CLC HRB OLG REC RNG TBR WLD WRA
8051	- MARY DEUEL. ALT CLC TBR WRA	10640	- SCOT DIFFENBAUGH' CLC H2O HRB REC TBR VIS
2248	- MARY LOU DEVELTER' CLC ECN RDS	223	- FRANCIST DIGENOVA. CLC HRB REC TBR TRL WLD WRA WSR
2273	- CHARLES P DEVEREAUX ALT CLC TBR	240	- FRANCIST DIGENOVA. ALT CLC HRB TBR TRL WLD
4668	- CYNTHIA DEVEREUX ALT CLC TBR WRA	8191	- C G DILA' ALT CLC HRB OLG REC RNG TDR WLD WRA
4021	- PATRICIA DEVEREUX a DONALD CRADDOCK CLC	3684	- B DILLER' ALT CLC TBR WRA
2167	- JOSEPH W DEVERNA CLC RDS TBR	7572	- S M. DILLER. ALT CLC ECN OLG RNG TBR VIS WRA
1225	- DEVI' CLC HRB TBR WRA	4742	- BILL DILLINGER' FSH H2O OLG RNG TBR TRL VIS WLD
6073	- LINDA DEVI' CLC HRB TBR	2439	- ELEANOR M DILLION' ECN TBR
5546	- SANDY DEVIES' ALT CLC TBR WRA	3548	- PAUL a NANCY DILLION' ECN
6873	- JOHN W DEVIJIAN CLC ECN GEN TBR	3692	- ALICE M DILLON' CLC HRB
8952	- RODDY DEVITRY' ALT CLC ECN OLG RNG TBR VIS WRA	1287	- ALVIN & SHIRLEY DILTS' CLC TBR
4624	- CAROLE DEVLIN' AL TTRL	1609	- ALVIN H DILTS' REC
8789	- RICHARD DEVLIN. ALT CLC ECN GEN OLG RNG TBR VIS WRA	1759	- DOUGLAS DILTS' CLC RDS TBR WRA
7538	- MARTHA DEW' ALT CLC HRB OLG REC RNG TBR WLD WRA	11091	- TOM DIMES' ALT CLC GEN HRB RNG TBR
2299	- BARBARA DEWEIN' CLC REC TBR WRA	4392	- HERB & MARGARET DIMOCK' ALT CLC ECN OLG RNG TBR VIS WRA
3150	- ALENEDWEWEY' CLCHR	6333	- HERMAN DINDINGER' ALT CLC HRB OLG REC RNG TBR WLD WRA
1301	- JERRY & SANDY DEWEY GEN	11723	- RITA L DINDINGER' ALT CLC HRB OLG TBR WLD WRA
1486	- CHARLES T DEWOODY' ALT CLC HRB TBR TRL VIS WRA	858	- JIM DINES' ALT TBR
3043	- CHARLES T DEWOODY. ALT CLC HRB OLG TBR WLD WRA	6725	- MIRIAM B DINES' ALT
10252	- GREG DEYOUNG ALT CLC TBR WRA	11257	- MIRIAM B DINES, ALT CLC GEN HRB LND TBR
8253	- SERGE A DIAKOFF ALT CLC ECN GEN OLG RNG TBR VIS WRA	1263	- THOMAS E DINES CLC OWL TBR WRA
10501	- EDWARD DIAMOND ALT CLC ECN TBR WRA	11994	- THOMAS E DINES
9016	- RICHARD DIAZ' ALT CLC ECN OLG RNG TBR VIS WRA	9978	- DENNIS DINGEMAN' ALT CLC TBR WRA
296	- R J DICKARD' CLC FSH H2O REC RNG WIN WLD WRA	6808	- HUGH DINGLE, PHD. CLC FLE REC TDR
353	- RICHARD DICKARD' CLC DRT FLE H2O TBR WLD	9213	- DAVE DINNELL' CLC ECN HRB RDS TBR
11289	- RICHARD DICKARD' FSH H2O RDS RNG TBR	5320	- STEPHANIE DIN' ALT CLC HRB OLG REC RNG TBR WLD WRA
535	- SHIRLEY DICKARD' CLC GEN HRB OLG OWL PLN TBR	3969	- GERDA DINWIDDIE' ALT CLC HRB OLG TBR WI WRA
1164	- MRS R J DICKARD. JR' ALT CLC H2O OLG RDS RNG TBR TRL WIN WRA	6853	- DC' R DISCHMEN' CLC TBR
		7313	- ERICK B DISE' ALT CLC ECN OLG RNG TBR VIS WRA

4376	STEPHEN DITTMER CLC	2356	TED DOMPIER CLC ECN FSH GEN HRB TBR
2523	SALLY DITTMER-IDEKER ALT CLC HRB OLG RDS TBR TRL	5932	DON ROBINSONSAND/GRAVEL DON ROBINSON GENTBR
1392	KATHERYN DITTMER CLC GEN TBR	9882	MIKE DONAHOE CLC HRB
6853	CAROL DIVAN CLC TBR	7832	K. ANE DONEL ALT CLC TBR WRA
8349	JOHN DNEL ALT CLC HRB OLG TBR WLD WRA	3500	MARC DONETTE CLCTBR
1772	DENNIS D DIVER TBR	3150	MILES DONFORTH CLC HRB
2810	GINNY DU: CLC HRB REC TRL	1757	SCOT DONNELL LND
916	MICHAEL L DIXON FSH GEN TRL WLD	2199	MARYANNE DONNELLY ALT CLC FLE
1039	ROY DIXON ALTCLCECN	2806	M WONNE DONNER ALT CLC ECN HRB OLG TBR WLD WRA
912	STACN M DIXON FSH GEN TRL WLD	3855	FRAN DONOFRIO ALT CLC TBR
2240	ERNEST DLAYIS GEN	6594	PEARL L DONOHO ALT CLC HRB OLG TBR WLD WRA
7405	ROBERT DME ALT CLC HRB OLG REC RNG TBR WLD WRA	431	STANLEY E & HELEN DOOLITTLE HRB REC TBR
9962	CASAY DOA CLC GEN HRB TBR	20500	RONDOONE TRL
5020	SAM DOAK GEN LND TBR	3150	MICHAEL DORCEY CLC HRB
5337	DAVID DOAL ALT CLC HRB OLG REC RNG TBR WLD WRA	3170	JACK C DORITHY ALT CLC TBR
10190	TUANG DOAN CLC	6296	JENNIE DORMAN CLC ECN HRB TBR VIS WRA
5345	RICHARD DOBBINS ALT CLC ECN OLG RNG TBR VIS WRA	216	EMILY W DORNDORF CLC HRB RNG WRA
5312	SEANA DOBBINS ALT CLC HRB OLG REC RNG TBR WLD WRA	985	KENNETH B DORRIS ALT ECN
10543	TRICIA DOBBINS CLC GEN HRB TBR	3600	KENNETHB. DORRIS ECN
1309	L DOBOSZ' ALT CLC ECN HRB OLG REC TBR VIS WLD	708	L BRUCE DORRIS OWLTBR
9186	MARY DOBROW ALT CLC ECN OLG RNG TBR VIS WRA	5888	MARIA DORRIS ALT CLC HRB OLG REC RNG TBR WLD WRA
8369	BARRY DOBYNS' ALT CLC HRB OLG REC TBR WLD WRA	725	TOMMY B DORRIS' TBR
9796	NAT DOCHTLER ALT CLC TBR WRA	7779	AL DORSN' CLC H2O HRB REC TBR VIS
3676	NATHANIEL DOCHTLER ALT CLC HRB OLG TBR WLD WRA	2186	JENNIFER DORTON CLC
6929	MICHAEL DOCKERY. ALT CLC TBR WRA	7398	LYNN DOSENZWEIG CLC FLE OLG TBR WRA
6189	CHARLES Y DOCKHAM ALT CLC HRB OLG VIS	1685	MR & MRS. LESLIE W DOSS III, CLC ECN HRB OLG REC TBR
5818	LALOMI DOCKHAM ALT CLC HRB OLG REC RNG TBR WLD WRA	3737	DOUBLE OAK VINEYARDS VIRGINIA & ROBERT HILSMAN ALT CLC GEN H2O HRB OLG RNG TBR WRA
10859	LOLANI DOCKHAM TBR	3447	GERALD DOUGHERTY. CLC
9041	MARIAN DOCKHAM ALT CLC HRB OLG REC RNG TBR WLD WRA	11796	GERALD DOUGHERTY CLC
1845	MARIAN R DOCKHAM CLC GEN HRB OLG TBR VIS	1650	JIM DOUGHERTY CLC WSR
6624	WONNE DOCKTER ALT CLC ECN OLG RNG TBR VIS WRA	6775	JOAN DOUGHERTY ALT CLC HRB OLG REC RNG TBR WLD WRA
7351	DAVID DODD ALT CLC HRB OLG TBR WLD WRA	8423	PHILIP DOUGHERTY CLC ECN
667	JEFFERY DODD TBR WRA	6434	ANNA DOUGLAS ALT CLC ECN GEN OLG RNG TBR VIS WRA
898	LONNIE DODD. ECN TBR	8421	DAVID DOUGLAS CLC GEN RDS TRL WRA WSR
899	SYLVIA DODD. ECN TBR	6269	DIANE DOUGLAS ALT CLC TBR WRA
81	JAMES M DODDS CLC HRB TBR	3721	GERALD DOUGLAS ALT CLC H2O HRB OLG TBR WLD WRA
11205	JAMES M DODDS CLC HRB TBR VIS	8450	RUTH DOUGLAS. ALT CLC GEN HRB OLG REC TBR WLD WRA
5703	ELAINE J DODGE ALT CLC HRB OLG TBR WLD WRA	10175	SHELESE DOUGLAS CLC FLE HRB RDS
3477	JAMES DODGE CLC ECN H2O TBR WLD WRA	9438	STEVEN DOUGLAS ALT CLC ECN OLG RNG TBR VIS WRA
2228	MRS. H J DODGE ALT CLC HRB	1216	MARY JANE DOUGLAS CLC RDS WRA
1940	DODSON WHOLESAL LUMBER J B PHELPS TBR	4839	K.J DOURITH ALT CLC HRB OLG REC RNG TBR WLD WRA
8285	MARCIA DOERR ALT CLC ECN OLG RNG TBR VIS WRA	1689	ALBERT P DOVER CLC ECN HRB TBR WRA
6171	MRS M DOHERTY ALT CLC HRB OLG REC RNG TBR WLD WRA	1582	LYNN DOVER CLC ECN HRB TBR
2176	CATHERINE DOKKEN CLC RDSTBR	9853	PAM DOVER ALT CLC ECN OLG RNG TBR VIS WRA
10792	L DOLIT CLCOLGTBRWRA	3500	R DOW CLCTBR
3491	LYALLL DOLL CLC	1868	PETE DOW, JR TBR
4263	DENISE DOMBROWSM RDSTBR TRL WRA	8044	CATHY DOWD ALT CLC ECN OLG RNG TBR VIS WRA
1864	CURT & JANE DOMMEYER RDS REC TRL WRA		

6123	• EUSA DOWD ALT CLC TBR WRA	10882	• DUANE CLC FSH REC
949	• RITA DOWELL CLC DRT ECN TBR	3492	• PAUL J DUBOWY ALT CLC TBR
6853	• LYNN D DOWING CLCTBR	6853	• DEBRA DUCCINI CLC TBR
6564	• MILBURN & MILDRED DOWNEY' ALT CLC HRB OLG TBR WLD WRA	8613	• JOSEPH DUDEK ALT CLC HRB OLG TBR WLD WRA
4467	• ROXIE DOWNIE ALT WRA	2162	• NANCY DUDZIK CLC GEN
472	• MINDY DOWNS REC TBR	524	• FRANKDUERSON TBR
8960	• KAYU DOX CLC TBR	10529	• DARRIN DUFBERRY CLC GEN HRB TBR
4626	• CHARLES DOYLE ALT CLC TBR	6855	• NANCY DUFFY ALT CLC H20 REC TBR WLD
7717	• EDWARD DOYLE ALT CLC ECN OLG RNG TBR VIS WRA	3500	• KAREN DUFRESNE CLC TBR
7716	• MAREORE DOYLE ALT CLC ECN OLG RNG TBR VIS WRA	3237	• DIANA DUGAN CLC FSH
8917	• MARGUERITE DOYLE ALT CLC HRB OLG REC RNG TBR WLD WRA	1967	• GEORGES DUGGAR REC VIS WIN
2938	• MR & MRS. B. DOYLE ALT CLC OLG	1887	MARGARET P DUGGAR LND RDS REC TRL VIS WIN
6469	• MRS MARION DOYLE CLCTBR	3675	MONTI E DUGGEN' CLC HRB TBR
8825	• RICHARD F. DOYLE' CLC ECN FAC HRB MIN PLN RNG TBR VIS	6667	LYLA DUGLEE ALT CLC ECN OLG RNG TBR VIS WRA
2094	• WE DOYLE, JR TBR	10373	J B DUGLURGLIS CLC
4114	• ERIN DRACOS ALT CLC ECN OLG RNG TBR VIS WRA	6562	M DUHAN ALT CLC HRB OLG REC RNG TBR WLD WRA
10554	• ERIN DRACOS CLC GEN HRB TBR	10029	• ALLISON DUKE CLC GEN HRB TBR
3565	• BILL DRAKE ALT CLC GEN HRB REC TBR	3881	• ELLEN KAY DUKE ALT CLC HRB OLG TBR WLD WRA
11993	• JAMES DRAKE CLC REC	1781	• DUKE PACIFIC, INC DIERK D PETERS TBR
4620	• DRAKE TIMBER CO JAMES DRAKE CLC ECN TBR	1057	• DICK DUKER CLC
6307	• MRS RICHARD J. DRAKE, JR • CLC H20 HRB REC TBR VIS	9113	• DENNISA DUMOND ALT CLC ECN OLG RNG TBR VIS WRA
8202	• MARKA DRANEY' CLC H20 HRB OLG REC RNG TBR TRL WIN WLD	390	• CHERI DUNAN CLC DRT FSH TBR
8112	• MARLEA DRANEY ALT CLC ECN HRB OLG RNG TBR TRL VIS WIN WRA	5384	• DENNEY DUNAUS ALT CLC HRB OLG REC RNG TBR WLD WRA
11076	• MARLEA DRANEY' CLC ECN H20 HRB TBR WLD	7951	JAMMIE DUNBAR ALT CLC TBR WRA
10738	• RICHARD DRAPEN CLC OLG TBR WRA	9715	• KATHERINE DUNBAR ALT CLC ECN OLG RNG TBR VIS WRA
8941	• CIERRELL DRAWHORN ALT CLC HRB OLG REC RNG TBR WLD WRA	6750	• CHARLES DUNCAN ALT CLC HRB OLG REC RNG TBR WLD WRA
10727	• J M DREMSEN ALT CLC TBR WRA	384	• CHERI DUNCAN TBR
2323	• KIM DRESEL ALT CLC FLE H20 OLG TBR	4823	• STEVE DUNGER ALT CLC ECN OLG RNG TBR VIS WRA
9310	• R DRESSENDARFER CLC H20 HRB REC TBR VIS	7713	• STEVE DUNGER ALT CLC ECN OLG RNG TBR VIS WRA
8057	• PAT DRESSENDORF ALT CLC TBR WRA	2883	• MIKE DUNHAM' ECN REC RNG TBR
4004	• PATRICIA DRESSER CLC LND OLG RNG TBR WRA	11329	• ED DUNKLEY TRL
9424	• MARY DRMEL ALT CLC ECN OLG RNG TBR VIS WRA	1591	• GERARD DUNKLY GEN TBR
6318	• MARILYN W. DRICHAS ALT CLC HRB OLG REC TBR WLD WRA	4657	• LAUREN DUNLAP ALT CLC TBR TRL WRA
7204	• ELSIE DRINKEN ALT CLC ECN OLG RNG TBR VIS WRA	7785	• MR & MRS ARTHUR DUNMIRE CLC DRT H20 HRB REC TBR VIS
3575	• MASINA DROLLINGER' ALT CLC HRB OLG REC RNG TBR WLD WRA	10935	• CHARLENE DUNN CLC
1557	• JACK W. DRONE, JR • ECN REC TBR	3934	• MARY DUNN ALT CLC HRB OLG TBR
1896	• DAVID DROCUT CLC	3683	• SUSAN DUNNE ALT CLC HRB
7103	• DEAN DROSS ALT CLC HRB OLG REC RNG TBR WLD WRA	9462	• EDITH DUNSMUIR' ALT CLC HRB OLG REC RNG TBR WLD WRA
9031	• DEBRA KAY DROSS ALT CLC HRB OLG REC RNG TBR WLD WRA	5441	• JAMES DUPREE ALT CLC HRB OLG REC RNG TBR WLD WRA
4777	• SARA DROTTY CLC GEN OLG TBR WRA	9215	• MARY DUPREE CLC H20 HRB OWL RDS RNG TBR WLD
9428	• ANTHONY DROXEL ALT CLC ECN OLG RNG TBR VIS WRA	7683	• ERIN DURAN CLC GEN OLG TBR WRA
9429	• ROBERT DROXEL ALT CLC ECN OLG RNG TBR VIS WRA	8274	• GALO T' DURAN ALT CLC ECN OLG REC RNG TBR VIS WRA
7922	• MIKE DRUME ALT ECN GEN HRB TBR	10624	• JUANITA DURAN CLC H20 HRB REC TBR VIS
7913	• JOSEPH N DRURY' ECN	2856	• JACOB DURBIN ALT CLC HRB OLG REC TBR VIS WLD WRA
592	• LAUREN D DRUTZ CLC TBR	5134	• JACOB DURBIN ALT CLC HRB OLG REC RNG TBR WLD WRA
5395	• M D DUAL ALT CLC HRB OLG REC RNG TBR WLD WRA	2860	• TERRY DURBIN CLC TBR
		5362	• MRS AD DURET ALT CLC HRB OLG REC RNG TBR WLD WRA
		394	• VIOLETTE DUROUX CLC HRB RNG
		6428	• DOROTHY DURRETT ALT CLC ECN OLG RNG TBR VIS WRA

6096	- ANTHONY M DURSO ALT CLC ECN OLG RNG TBR VIS WRA	5530	- JENNIFER EASTE ALT CLC TBR WRA
9321	- DEBORAH D DURST ALT CLC ECN OLG RNG TBR VIS WRA	7079	- JUSTIN EATINGER ALT CLC ECN OLG REC RNG TBR VIS WRA
4513	- DEEANNE DURST ALT CLC ECN HRB OLG RNG TBR TRL VIS WLD WRA	6522	- DAVIDA EBEHARDT ALT CLC HRB OLG REC RNG TBR WLD WRA
9320	- JAMES M DURST ALT CLC ECN OLG RNG TBR VIS WRA	1451	- W C EBERHARDT ECN TBR WRA
9830	- VAN B DURT ALT CLC TBR WRA	3154	- ALLAN EBERHART ALT CLC TBR
9885	- MAXINE S DUSSEISE CLC ECN H2O HRB TBR VIS WLD	1097	- BETTY EBERLY CLC GEN RDS TBR
1760	- SUSAN B DUSSELL CLC OLG RDS RNG TBR TRL VIS WIN WRA	9474	- BRIAN R EBERT ALT CLC TBR WRA
6706	- TOM DUTCHEN ALT CLC ECN HRB OLG RDS TBR WLD WRA	10988	- JAMES F EBY ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
11509	- TOM DUTCHEN CLC DRT HRB	6280	- PAULA A ECHABORNE ALT CLC ECN TBR WRA
11675	- HAMILTON & ALAN S. DUTCHER GEN OWL	3624	- DIANN ECHEGARAY CLC HRB TBR
11675	- RUTH H & EDWARD DUTCHER GEN OWL	11611	- DIANN ECHEGARAY CLC FSH HRB TBR
9721	- PEGGY DUTTON ALT CLC ECN OLG RNG TBR VIS WRA	3990	- BETTY ECKELS ALT CLC ECN OLG RNG TBR VIS WRA
9719	- TELFORD DUTTON ALT CLC ECN OLG RNG TBR VIS WRA	4408	- TERESE ECKHART CLC HRB TBR
6867	- KATHY DUVALL CLC HRB RNG WRA	10703	- DAVIDT ECONOME ALT CLC TBR WRA
2088	- LARRYR DWSEN LND	2719	- ECP FLY FISHERS A W DAHLEN CLC ECN FSH GEN HRB TBR
955	- REBECCA DWAN ALT CLC HRB REC RNG TBR	726	- GUY EDDY ALT ECN
4607	- NANCY & TIM DWON & LONGO REC WIN	3457	- ISLE EDEN ALT CLC HRB OLG TBR WLD WRA
1497	- DAVID DWYER CLC ECN HRB RNG WRA	6172	- CHARLES B EDER CLC HRB TBR
4887	- DEBBIE DWYER ALT CLC HRB OLG REC RNG TBR WLD WRA	4003	- JOHN EDMUNDS CLC ECN
1620	- DON L DWYER ECN TBR	2000	- R A EDWARD ALT ECN GEN
10698	- KEVIN & MARY DWYER ALT CLC HRB OLG REC TBR WLD WRA	1384	- BARBARA EDWARDS ECN OLG OWL WRA
7866	- MARK DYAL ALT CLC HRB OLG REC RNG TBR WLD WRA	10643	- BEATRICE EDWARDS CLC H20 HRB REC TBR VIS
4007	- MARK DYDAHL ALT CLC ECN HRB OLG REC TBR VIS	6383	- CARL EDWARDS ALT CLC HRB OLG REC RNG TBR WLD WRA
6853	- GERALDINE L DYE CLCTBR	4260	- DAVID EDWARDS REC
1417	- MIKE, RHONDA, & MICHELLE DYER ECN RDS REC TBR WRA	6	- DAVIDA EDWARDS CLC OLG RDS REC RNG TBR TRL WLD WRA
4326	- JUSTIN DYGERT ALT	8734	- DONNA & JAMES EDWARDS CLC FSH
3163	- JUSTIN CLARK DYGERT ALT CLC GEN H2O HRB LND OLG RNG TBR	961	- JESSIE M EDWARDS ECN GEN REC
11735	- JUSTIN CLARK DYGERT ALT	11159	- JOANNE D EDWARDS CLC GEN OLG RDS REC RNG TBR TRL WRA
78	- ROSEMARY DYKE ALT CLC HRB RNG TBR WRA	1785	- KATHY EDWARDS CLC
8304	- LINDA DYKEN ALT CLC HRB OLG REC RNG TBR WLD WRA	5154	- MARY EDWARDS ALT CLC ECN OLG RNG TBR VIS WRA
6133	- L DYKER ALT CLC TBR WRA	5657	- MICHELIN EDWARDS ALT CLC ECN OLG RNG TBR VIS WRA
9840	- TOM OYNSKE ALT CLC TBR WRA	2012	- ROBERT EDWARDS ALT ECN GEN
2198	- REBEKAH EADS CLC TBR	11084	- RON EDWARDS ALT OWL TBR
7265	- JILL EARICK ALT CLC TBR WRA	1371	- RONALD EDWARDS ALT ECN REC TBR WRA
7005	- DIANE EARLY ALT CLC TBR WRA	11441	- SUSAN EDWARDS CLC TBR WRA
4785	- HELEN EARLY CLC GEN OLG TBR WRA	2206	- SUSAN P EDWARDS ALT CLC HRB OLG TBR WLD WRA
1439	- EARTH FIRST JOHN DAVIS GEN	6617	- DURIA EFCHAK ALT CLC ECN DLG OWL RNG TBR VIS WRA
9502	- EARTH SKY GARTH A GILCHRIST CLC ECN OLG TBR VIS WLD WRA	10177	- GRANTEFHAN CLC
8928	- JUDITH EASH-GEAR ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	5692	- MARSAM EFUE ALT CLC HRB OLG REC RNG TBR WLD WRA
6071	- ROSE EAST ALT CLC HRB OLG REC RNG TBR WLD WRA	11661	- RAYMONDH EGAN CLC
9595	- EAST WEST FELLOWSHIP DALE SMITH CLC FSH HRB TBR	3201	- R A EGENER ALT CLC HRB OLG TBR WLD WRA
12230	- EAST WIND, INC ALT CLC ECN HRB OLG PLN RNG TBR WRA	5405	- GARY M EGGLESTON, JR CLC H2O HRB REC TBR VIS
		9510	- RUTHEICHELBERGER ALT CLC TBR WRA
		10718	- DENNIS EICHOLTZ ALT CLC TBR WRA
		2089	- MARY E EIDIBAUER CLC ECN GEN HRB TBR VIS WRA
		5094	- BESSIERMANN ALT CLC HRB OLG REC RNG TBR WLD WRA
		6330	- JONATHAN EISENSTADT ALT CLC HRB OLG RDS RNG TBR

119	- GAYLE A EISNER. CLC HRB TBR WRA	5741	• WILLIVE I ELLIOTT WRA WSR
3302	- GAYLE A EISNER. CLC GEN HRB TBR	10784	• CYNTHIA ELLIS' ALT CLC HRB OLG REC TBR WLY WRA
10569	- BILLETTITS CLC GEN HRB TBR		
2242	- GREG EKINS. ALT GEN	10402	- D ELUS ALT CLC GEN TBR WRA
4282	- JOHN EKLUND CLC ECN HRB OLG RNG TBR VIS WLD	3406	- DAN ELLIS CLC ECN FAC HRB MIN PLN RNG TBR VIS
5677	- PETER EKMAN ALT CLC HRB OLG REC RNG TBR WLD WRA	4726	- DAN ELLIS CLC
7595	- D ELAM ALT CLC ECN OLG RNG TBR VIS WRA	7291	- JIM ELLIS ALT CLC TBR WRA
3080	- GEORGINA R ELAM ALT ECN GEN	7260	- KRISTI ELUS ALT CLC TBR WRA
301	- ELAM LOGGING BILL ELAM, JR.. ECN	4873	▪ MICHELE ELUS ALT CLC HRB OLG REC RNG TBR WLD WRA
9396	- THOMAS ELAN. ALT CLC TBR WRA	4883	• MICHELE ELLIS ALT CLC HRB OLG REC RNG TBR WLD WRA
234	- ELEANOR ELANDER. ECN H2O HRB OLG RNG TBR WRA	3500	- NORMAN ELLIS CLC TBR
7589	- LEROY ELANE. ALT CLC ECN OLG RNG TBR VIS WRA	6086	- ROBERT ELLIS ALT CLC ECN OLG RNG TBR VIS WRA
480	- ROGER ELBERG CLC GEN HRB TBR WRA	10404	• S ELLIS, ALT CLC TBR WRA
7161	- ROGER ELBERG ALT CLC TBR WRA	1190	• STACI ELLIS. CLC HRB REC
11836	- ROGER ELBERG CLC HRB TBR WRA	3155	- JOHN ELLISA ALT CLC TBR WRA
39	- CHRISTINE LEIGH ELLYER' ALT CLC FLE HRB	6853	- KATHLEENA ELLOZAIR' CLC TBR
8755	- HOWARD W ELDER' ALT CLC ECN OLG RNG TBR VIS WRA	322	▪ JOSPEH D ELLSWORTH ECN TBR
933	- J W ELDER. CLC	378	- MIKE E ELLSWORTH TBR
260	- ROBERT B ELDER CLC	3500	- STEVE ELLTES CLC TBR
5275	- WILLIAM ELDER ALT CLC ECN OLG RNG TBR VIS WRA	8741	• MERRITT & MARION ELMORE ALT CLC HRB REC WRA
3344	- MARTHA ELDERSON. CLC RDS TBR TRL WRA	6298	• WENONAH ELMS CLC ECN HRB TBR VIS WRA
3957	- MARTHA ELDERSON ALT CLC TBR WRA	1274	• EVANGELINE ELSTON ALT CLC OLG REC RNG TBR WLD WRA WSR
7628	- BONNIE ELDON ALT CLC TBR WRA	4439	• STAPHAN EMAT TBR VIS
11337	- ANNE ELDRED CLC ECN GEN TBR	7859	• CATHERINE EMERSON ALT CLC HRB OLG REC RNG TBR WLD WRA
7541	- ELERECITUE. ALT CLC HRB OLG REC RNG TBR WLY WRA	897	EMERSON LOGGING CO INC M R EMERSON ALT TBR WRA
6767	- MYRA ELEWIN ALT CLC HRB OLG REC RNG TBR WLY WRA	861	• LAUREL EMERT GEN TBR
4223	- JASON ELFERT ALT CLC ECN OLG RNG TBR VIS WRA	10707	• WILLIAM D EMILIO, JR ALT CLC TBR WRA
3851	- LAURISA ELHAI CLC HRB OLG TBR TRL	1112	▪ DEE EMLER' GEN
3150	- JIM EUOT CLC HRB	1114	• RALPH H EMLER TBR
5147	- CASPER ELISE. ALT CLC HRB OLG REC RNG TBR WLD WRA	5125	• ROBERT EMMET ALT CLC HRB OLG REC RNG TBR WLO WRA
5054	- CAREN ELKAN' ALT CLC HRB OLG REC RNG TBR WLD WRA	2526	• LEAH EMPEY ALT CLC GEN HRB OLG TBR WLD WRA
6853	- RUKMIWATI ELLEFSON' CLC TBR	4631	• SANDRA ENDERS ALT CLC FSH H2O HRB TBR
3638	- GERALD A ELLER CLC H2O HRB OLG RDS REC RNG TBR TRL WLD WRA	1309	• J ENEN ALT CLC ECN HRB OLG REC TBR VIS WLD
97	- LOLA ELUGET CLC ECN REC TBR WLD	559	• ALAN M ENGBRETSON CLC GEN HRB TBR
7950	- DANA ELLIOT TBR	5030	GEORGE ENGEL' ALT CLC HRB OLG REC RNG TBR WLD WRA
7953	- DANA ELLIOT ALT CLC TBR WRA	341	• BARBARA ANN ENGELHARDT CLC
4087	- MR & MRS ELLIOT H2O OLG TBR TRL WRA	5454	• LYNN ENGLAND ALT CLC ECN OLG RNG TBR VIS WRA
1029	- SHIRLEY LEE ELLIOT GEN	9720	• REX ENGLAND ALT CLC ECN OLG RNG TBR VIS WRA
5949	- ANGELA ELLIOTT ALT CLC HRB	8956	▪ THOMAS L ENGLE, JR ALT CLC ECN OLG RNG TBR VIS WRA
42-32	- D ELLIOTT CLC OLG TBR WRA	9372	• GARY W ENGLISH' CLC H2O HRB REC TBR VIS
3482	- DIETLINDE ELLIOTT CLC HRB TBR	9599	• MR & MRS PAUL ENGLISH CLC TBR
10114	- ERIN ELLIOTT. ALT CLC ECN OLG RNG TBR VIS WRA	768	- CLIFF ENGSTERN GEN TBR VIS
6853	- GEORGANE ELLIOTT CLC TBR	6317	• DIANE SHUSTER ENNIS ALT CLC HRB
6853	- WALKER C ELLIOTT. CLC TBR	9174	- ERIC ENNIS ALT CLC ECN OLG RNG TBR VIS WRA
6853	- GRANGER ELLIOTT CLC TBR	4318	• BEVERLY L ENOCH CLC HRB OLG RDS TBR WRA
452	- JASON ELLIOTT CLC	1193	• HELEN & EARL ENOS CLC RDS WRA
453	- JASON R ELLIOTT TBR	3817	• ROBERT & MARY ENRIGHT ALT CLC HRB OLG TBR WLD WRA
778	- JOHN ELLIOTT ECN OLG OWL TBR		
11704	- JUDY A & RAY ELLIOTT CLC HRB OLG TBR TRL WRA		
6700	• MARK ELLIOTT CLC TBR		
1860	• I ELLIOTT ALT ECN		
6637	• ROY T ELLIOTT TBR WRA		
2520	• W I W E I ELLIOTT CLC H2O HRB LND OLG RDS RNG TBR TRL		

7797	VIRGIL F ENRIGHT CLC H2O HRB REC TBR VIS	3500	DIANA ESTRADA CLC TBR
7008	JOHN ENSCH. ALT CLC TBR WRA	2040	SUZANNE ETTER ALT ECN GEN
5319	ERICA EPPERBOZ. ALT CLC HRB OLG REC RNG TBR WLD WRA	8930	JUDITH EUOHLE ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
10564	ERICA EPPERSON CLC GEN HRB TBR	8791	KIM EURICH ALT CLC ECN OLG RNG TBR VIS WRA
389	DAVIDEPSTEIN & PATTY PLATT CLC RDS TBR WRA	10274	KEVIN EUST ALT CLC TBR WRA
8585	JANICE ERAIN ALT CLC HRB OLG REC RNG TBR WLD WRA	10486	DAVID EUSTON ALT CLC TBR WRA
9083	JANICE ERAIN ALT CLC TBR WRA	9803	LYNITA M EVALLS CLC OLG TBR WLD WRA
11997	STEFANIE ERBER CLC	4023	AMELIA EVANS ALT CLC ECN OLG RNG TBR VIS WRA
2588	ROCHELLE EREMAN CLC	247	ART EVANS ALT CLC ECN GEN REC RNG TBR
1351	BOB ERICKSON CLC TBR WRA	1787	CLIFFORD EVANS LND
1484	DARRELL E ERICKSON TBR	262	HEIDI EVANS CLC ECN HRB REC RNG TBR
3297	ERICK ERICKSON ALT CLC TBR WRA	2348	KENNETH D. EVANS CLC ECN FSH GEN HRB TBR
9248	ERICK R ERICKSON: CLC ECN H2O HRB REC TBR VIS WRA	7597	KENNETH L EVANS ALT CLC ECN OLG RNG TBR VIS WRA
4298	LINDA ERICKSON ALT CLC ECN OLG RNG TBR VIS WRA	5201	KRISTEN EVANS ALT CLC HRB OLG REC RNG TBR WLD WRA
3124	VELAY ERICKSON ALT ECN GEN	1790	MICHAEL G EVANS TBR
1628	ERICKSON AIR-CRANE CO JACK MONTGOMERY. TBR VIS	10839	PATRICIA EVANS TBR
7545	ERICKSON LUMBER COMPANY FRANK STEWART CLC LND OWL TBR WLD	1309	RICHARD EVANS' ALT CLC ECN HRB OLG REC TBR VIS WLD
2236	CRAIG ERICKSON, MANAGER TBR	10077	ROBERT EVANS ALT CLC HRB OLG REC RNG TBR WLD WRA
4555	- A ERICSON CLC HRB VIS	5256	W C EVANS. ALT CLC HRB OLG REC RNG TBR WLD WRA
10515	- HARRY M ERL. CLC TBR WRA	4458	LM. EVANS & W D DIEDRICH ECN H2O HRB PLN RDS REC RNG TBR WIN
10754	- JANET ERL ALT CLC HRB OLG REC RNG TBR WLD WRA	11032	SUE EVANS ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
343	JANET S ERL CLC ECN TBR	3500	JUDITH EVEFEKEN CLC TER
1667	LILA ERL CLC TBR	11009	NANCY EVENS ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
7354	- SHALA ERLICH CLC ECN OLG TBR WRA	1367	PAT H EVERETT CLC ECN HRB
11743	- FRANZ ERSKINE ECN	6824	ELIZABETH EVERHART CLC ECN TBR
3766	- LISA M ERSKINE. CLC	3679	WILLIAM D. EVERS REC
1477	GRACE ERTEL CLC H2O OLG RDS REC RNG TBR WLD WRA	3079	- DAYLE EVERSON ALT ECN GEN
7806	ANDREA ERTL ALT CLC TBR WRA	8866	JANET EVERSON ALT CLC HRB OLG TBR WLD WRA
7847	ANDREW C ERTL ALT CLC TBR WRA	4422	JOHN EVERSON ECN TBR
7503	- KARN ERUIR ALT CLC HRB OLG REC RNG TBR WLD WRA	3078	D L EVERSON, JR ALT ECN GEN
10635	- JAMES S. ERWAY. CLC H2O HRB OLG REC TBR VIS	2549	JOE EVICH ALT GEN TBR
9097	- DEBORAH ERWIN, ALT CLC TBR WRA	5055	BRIAN L EVITTENDER: ALT CLC ECN OLG RNG TBR VIS WRA
6853	- KATHLEEN ERWIN CLC TBR	11190	- J EWASKO CLC OLG TBR WRA
8320	- HARCELA ESCOBAR ALT CLC HRB OLG REC RNG TBR WLD WRA	7594	MARY EWEBB ALT CLC ECN OLG RNG TBR VIS WRA
9459	- JANYCE ESCOBAR ALT CLC ECN OLG REC RNG TBR VIS WRA	2656	DIANE EWELL CLC ECN H2O HRB OLG REC TBR WLD WRA
5661	- DIANA G ESELN ALT CLC ECN OLG RNG TBR VIS WRA	3422	DIANE EWELL ALT CLC HRB OLG TBR WLD WRA
9582	- ROB ESKRIDGE. CLC TBR	9836	- DIANE EWELL ALT CLC TBR WRA
2698	DAVID ESLER: ALT CLC HRB OLG TBR WLD WRA	4980	- NANJI EWING CLC HRB
5685	MARK ESLOO ALT CLC HRB OLG REC RNG TBR WLD WRA	12250	- JOHN MILEY. ALT CLC HRB OLG TBR WLD WRA
4971	- JUDY ESOLA. ALT CLC HRB OLG TBR WLD WRA	966	- EVA JEAN EXLINE TBR
9414	- EDUARDESPIN ALT CLC ECN OLG RNG TBR VIS WRA	444	- APRIL EYMANN. CLC TBR TRL WRA
829	- BEVERLY ESPINO CLC HRB TBR	3252	- RICK MCHESON TBR WRA
1347	- GEORGE ESQUIBEL C FLE GEN HR	5607	F EZZELL ALT CLC HRB OLG REC RNG TBR WLD WRA
9520	- MICHELE ESTABROOK CLC HRB TBR	5610	LI EZZELL ALT CLC HRB OLG REC RNG TBR WLD WRA
10811	- NAOMI & ERIC ESTEP CLC OLG TBR WRA	5609	SUN EZZELL ALT CLC HRB OLG REC RNG TBR WLD WRA
9577	- DAVID ESTES CLC		
9736	LYNN ESTES ALT CLC ECN OLG RNG TBR VIS WRA		

10875	- SUN EZZELL FLE HRB TBR	5471	- STA FARREU ALT CLC ECN OLG RNG TBR VIS WRA
5106	- JENIKER F ALT CLC HRB OLG REC RNG TBR VIS WLD WRA	10873	- STA FARRELL CLC TBR
9544	- NATHAN F. CLC HRB	2587	- PAUL FARRINGTON CLC TBR
1316	- ROBERTA FABEL GEN TBR	7299	- GLENN J FARRIS ALT CLC TBR WRA
6853	- PENNY FABLE CLC TBR	7349	- WILLIAM FARTIGGE ALT CLC TBR WRA
5805	- JOE FABRETTI ALT CLC ECN OLG RNG TBR VIS WRA	4405	- CARL H FASSINGER CLC WSR
5804	- JOHN FABRETTI ALT CLC ECN OLG RNG TBR VIS WRA	2894	- FAST TIMES ARCHEOLOGY TOURS ALT CLC HRB OLG TBR WLD WRA
926	- TIMOTHY C FAGAN CLC	7800	- CHERYLFASTIGGI ALT CLC TBR WRA
2898	- JOAN C FAGERSKOG ALT CLC ECN HRB OLG	203	- MRS JAMES H FAULCONER CLC ECN TBR
10045	- MATT FAHEY CLC GEN HRB TBR	2918	- BECKYFAULKNER CLC
3150	- L S FAIL CLC HRB	2757	- TOM FAUST CLC ECN FSH GEN H2O HRB RDS TBR TRL WLD
2531	- GERALDINE A. FAIR, M.D. ALT CLC REC	3944	- TOM FAUST CLC H2O HRB TBR TRL VIS WLD
1103	- DONALD & SHARON FAIRCLOUGH. CLC DRT TBR	1266	- KATHLYN FAY, GEN
8894	- LOUISA FALCON ALT CLC ECN OLG RNG TBR VIS WRA	10384	- ROBERTFEARU WRAWSR
3500	- LORELLE FALF CLC TBR	2827	- FEATHER RIVER FOREST PROD GEORGE CULBERTSON TBR
5060	- EDWARD FALICK ALT CLC ECN OLG RNG TBR VIS WRA	11227	- FEATHER RIVER FOREST PROD GORDON CULBERTSON GEN TBR
9663	- VICKIE FALLON, ALT CLC HRB OLG RDS REC RNG TBR VIS WLD WRA	2290	- FEATHER RIVER OPP CENTER MARIE GRASSI-DONIO. ECN TBR
8934	- G FALM. ALT CLC HRB OLG REC RNG TBR WLD WRA	8488	- FED/NEIGHBORHOODS NEVADA COUNTY BETTY SIMPSON ALT CLC H2O HRB OLD TBR VIS WRA
3484	- REGINA FALSETTO ALT CLC HRB TBR WLD WRA	10398	- KATHERINE FEGETTE CLC TBR
20018	- GARY FALXA CLC ECN FSH OLG OWL PLN RDS RNG TBR WLD WRA	9072	- MARY FEHLE ALT CLC TBR WRA
10811	- ROY M FANINI-GROU, CLC OLG TBR WRA	8712	- G J, FEHLHABER AIR CLC FLE H2O HRB OLG RNG TBR TRL VIS
1347	- FRANK B FANIQUICH CLC FLE GEN HRB	7607	- BRIAN D FEIGE ALT CLC TBR WRA
8848	- BILL FANT CLC	3362	- BENJAMIN FEINBORAM TBR
7880	- FANTASY CONDO. ALT CLC ECN OLG RNG TBR VIS WRA	3991	- BRUCE & MADELINE FEINGOLD. ALT CLC HRB OLG TBR WRA
281	- FAR WEST PRO SKIING INC ALAIN J. LAZARD, ALT WIN	8126	- LOUISE FELD CLC GEN TBR WRA
1176	- TONY FARIA CLC HRB REC	4744	- DAVID FELDERSTEIN ALT CLC
3150	- JOHN R FARISON CLC HRB	7135	- EUGENE FELDMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
3027	- JOHN FARKAS REC WRA	7280	- GARY FELIX ALT CLC TBR WRA
4959	- MAUREEN FARLEY AIR ALT CLC HRB OLG REC TBR WLD WRA	5431	- JASON F E U CLC HRB REC TBR TRL VIS WIN
6565	- MIKE FARMER CLC ECN HRB TBR	9969	- CHRIS FELLERS CLC GEN HRB TBR
4806	- HOWARD FARR ALT CLC HRB OLG REC RNG TBR WLD WRA	1335	- STEPHEN J FELLOWS ALT REC
5298	- JOHN FARR ALT CLC ECN OLG RNG TBR VIS WRA	4481	- SUSAN FELLOWS REC WIN
5357	- ROSE FARR ALT CLC ECN OLG RNG TBR VIS WRA	11921	- V. LOIS FELMLEE. CLC HRB REC
4829	- WILLIAM FARR ALT CLC ECN OLG RNG TBR VIS WRA	9259	- ROBERT FELSCH CLC HRB
122	- DENNIS FARRANT TBR	37	- JAMES W FELTHOUSE ALT CLC HRB RNG WRA
261	- DENNIS FARRANT TBR	9665	- ELLEN FELTHOUSEN. ALT CLC TBR WRA
4527	- RICHARD FARRAR ALT CLC ECN OLG RNG TBR VIS WRA	1606	- JOSEPH G FENIMORE CLC HRB
9571	- DIANE FARRELL CLC H2O HRB REC TBR VIS	5121	- KIM FENNIMORE ALT CLC HRB OLG REC RNG TBR WLD WRA
4088	- JEFF FARRELL ALT CLC HRB OLG RNG TBR	5124	- KIM FENNIMORE ALT CLC HRB OLG REC RNG TBR WLD WRA
7183	- JOYCE FARRELL. ALT CLC TBR WRA	8860	- MARK & KATHLEEN FENTON ALT CLC HRB OLG REC RNG TBR WLD WRA
7185	- LISA FARREU. ALT CLC TBR WRA	10814	- MIKE FERGOSON OLG
4643	- PHILIP FARRELL CLC DRT ECN H2O HRB LND RDS REC RNG TBR TRL VIS WIN WLD WRA WSR	11354	- MIKE FERGOSON HRB
177	- PHILLIP FARRELL. LND TBR WRA	2274	- ARTHUR E FERGUSON CLC ECN RDS REC TBR VIS
8907	- RACHEL FARRELL ALT CLC ECN HRB OLG RNG TBR VIS WRA	1309	- CRAIG FERGUSON ALT CLC ECN HRB OLG REC TBR VIS WLD
4944	- SEAN FARRELL ALT CLC ECN OLG RNG TBR VIS WRA	3697	- GREGG FERGUSON CLC HRB OLG
		7279	- JAMES E FERGUSON. ALT CLC TBR WRA
		5436	- JEANNINE FERGUSON ALT CLC HRB OLG TBR WLD WRA
		4074	- KASSY FERGUSON CLC WRA
		9668	- CHARLES B FERNALD ALT CLC TBR WRA
		3272	- KAREN FERNANDES ALT CLC GEN HRB OLG TBR WLD WRA

8322	NEIL FERNANDES ALT CLC HRB OLG REC RNG TBR WLD WRA	2808	- PAT FINNEGAN ALT
1217	JOHN FERRARI DF OLG SIA TBR	9944	- TINA FINNEGAN CLC GEN HRB TBR
1118	- JOHN W. FERRARI GEN TBR WRA	1334	- BART FINNINGS ECN TBR
8272	- JOSEPH FERRARO ALT CLC ECN OLG RNG TBR VIS WRA	7746	- SHIRLEY FINSTER ALT CLC HRB OLG PLN REC RNG TBR WLD WRA
6201	- PATTI FERREE ALT CLC ECN OLG RNG TBR VIS WRA	9079	- SHIRLEY M FINSTER ALT CLC HRB OLG TBR WLD WRA
8647	- CRAIG FERRELL TBR	1318	- FIREBIRD DESIGN GREGG OLSON CLC GEN HRB OLG TBR WRA
3375	- RONDA FERRELL GEN TBR	11192	- BARBARA FIRESTONE ALT CLC ECN OLG RNG TBR VIS WRA
2271	- LOU F FERRETTO ALT CLC HRB OLG TBR WLD WRA	7987	- JENIFER E FIRGUL ALT CLC HRB OLG REC RNG TBR WLD WRA
11225	- DOUGLAS FERRIER GEN TBR WRA	11394	- ED & DEBRA FISCHER CLC
8039	- RANDY FERRINGER ALT CLC HRB OLG REC RNG TBR WLD WRA	10782	- F FISCHER ALT CLC HRB OLG RDS RNG TBR WLD WRA
7891	- PATRICIA FERRIS ALT CLC HRB OLG REC RNG TBR WLD WRA	7853	- KEVIN FISCHER ALT CLC ECN TBR WRA
11260	- PATRICK FERRIS CLC ECN TBR	3270	- NANCY FISCHER RDS TRL WRA WSR
306	- PATRICK A FERRIS CLC ECN FLE GEN HRB RNG TBR TRL VIS WLD	4033	- PETER & DAWA FISCHER ALT CLC ECN HRB OLG TBR WLD WRA
1246	- PATRICK A FERRIS CLC OLG	8620	- SHIRLEY R FISCHER ALT REC WRA
1758	- PATRICK A FERRIS CLC AEC TBR	6740	- ALLEN M FISH FLE OWL RDS RNA RNG TBR WLD
11188	- RAYTIN D FERRIS ALT CLC ECN HRB OLG RNG TBR TRL VIS WRA	9469	- BETTY JO FISHER ALT CLC ECN OLG RNG TBR VIS WRA
20505	- PERRIS FERRITER TBR	6093	- BRIAN FISHER ALT CLC ECN OLG RNG TBR VIS WRA
9670	- HUGH FERRY ALT CLC TBR WRA	12223	- DENNIS FISHER CLC ECN HRB
2042	- ROBERT M FESSENDEN ALT CLC OLG REC TBR VIS	3677	- JULIANA FISHER ALT CLC HRB REC TBR
5059	- DIANE FETTERLY ALT CLC ECN GEN OLG RNG TBR VIS WRA	11700	- JULIANNA FISHER CLC GEN HRB TBR
3535	- HARDID FETTERS AIR ALT CLC H20 HRB OLG RDS REC TBR TRL WLD WRA	6896	- KATHERYNE S FISHER ALT CLC HRB OLG REC RNG TBR WLD WRA
3500	- T FETZ CLCTBR	2160	- MONTE D FISHER ALT CLC HRB RDS
4679	- THERESA FEUNLAN ALT CLC TBR WRA	1874	- MR & MRS NORMAN C FISHER ALT CLC OLG TRL WLD WRA
2362	- FIBERTECHIND FRANK J OWENS ECN TBR	10546	- ROBYN FISHER CLC GEN HRB TBR
9601	- JULIA FICERT CLC GEN OLG TBR WRA	4826	- SANDY FISHER ALT CLC ECN OLG RNG TBR VIS WRA
11829	- D FIDALE TBR	3443	- SCOTT FISHER CLC
5289	- KARIA FIEGLAXER ALT CLC HRB OLG REC RNG TBR WLD WRA	3819	- STEVE FISHER CLC
1179	- JUDY FIELD ALT CLC H20 OLG REC TBR	4615	- PATRICIA FISK ALT CLC GEN HRB OLG
6282	- MARK FIELD ALT CLC TBR TRL WRA	11494	- GARRETT FISKS ALT CLC RNG TBR TRL VIS WRA WSR
11509	- ROBIN FIELD CLC DRT HRB	7724	- JO & JAMES FITAN ALT CLC HRB OLG REC RNG TBR WLD WRA
7306	- SANDY FIELD ALT CLC HRB OLG REC RNG TBR WLD WRA	4246	- FRANCES FITCH ALT CLC GEN
9994	- WAYNE FIELDING ALT CLC TBR WRA	765	- LEONARD FITCH ECN TBR VIS
3443	- FRANCINE FIELDS CLC	4427	- LEONARD FITCH ECN TBR
7675	- GABRIEL FIELDS CLC OLG TBR WRA	6309	- LARRY FITES, ENG GEN TBR VIS WRA
10040	- DEEANN FIKER CLC GEN HRB TBR	9053	- PAT FITSPENIRUDES ALT CLC HRB OLG REC RNG TBR WLD WRA
188	- LD FILER ALT ECN RNG TBR	5645	- JUDY FITZGERALD ALT CLC HRB OLG REC RNG TBR WLD WRA
9799	- K L ALT CLC HRB OLG TBR WRA	10081	- TOM FITZGERALD ALT CLC ECN OLG RNG TBR VIS WRA
6112	- MA ANNE I AU ALT CLC TBR WRA	8983	- LOURENE FITZSIMMONS CLC ECN GEN HRB LND OLG TBR
3393	- TIMOTHY FILLER ALT CLC H20 REC TBR TRL WSR	698	- ANN FIVENSON ALT CLC FLE GEN HRB REC TBR
7385	- CHERENE I CLC ECN OLG TBR WRA	5463	- SANDRA FN ALT CLC ECN OLG RNG TBR VIS WRA
1459	- LYNN FILLO CLC GEN HRB WIN WRA	6683	- STEVEN FLACK ALT CLC HRB OLG REC RNG TBR WLD WRA
6509	- STEVE FINE ALT CLC ECN I BR VIS WRA	8053	- ED FLAHERTY ALT CLC TBR WRA
6396	- STU FINE ALT CLC ECN GEN OLG NG TRL VIS WRA	10523	- AL FLAIES CLC GEN HRB TBR
10110	- SHARON FINGERSON ALT CLC ECN OLG 3 TBR VIS WRA	1729	- CHARLES FLAIRM CLC ECN HRB TBR VIS WRA
10777	- E FINK ALT CLC ECN FSH HRB OLG RNG TBR WLD WRA		
7755	- ALLAN FINLAY CLC HRB		
11895	- ALLAN FINLAY CLC GEN HRB RNG TBR		
8470	- JOE INNIS ALT CLC		

4072	- CARLA FLAMM, REC	2013	- STEVE FLOYD ALT ECN GEN
9454	- BRDEN I FLANAGAN: ALT CLC ECN OLG RNG TBR VIS WRA	9881	- WILLIAM FLOYD. H2O RNG SIA TBR
9453	- COURTNEY E. FLANAGAN. ALT CLC ECN OLG RNG TBR VIS WRA	9295	- THOMAS A FLUSTY ALT CLC ECN OLG RNG TBR URB VIS WRA
9455	- MEGIN FLANAGAN ALT CLC ECN OLG RNG TBR VIS WRA	2904	- CARL H FLYGT CLC TBR WLD
4221	- MR FLARIN. ALT CLC HRB OLG REC RNG TBR WLD WRA	339	- FLYING FISH MINE WINSLOW W HALL CLC TBR
9173	- DANNY FLATOW ALT CLC ECN OLG RNG TBR VIS WRA	7515	- DALE FLYN. PHD ALT CLC HRB OLG REC RNG TBR WLD WRA
10948	- CHARLES FLAVIN CLC HRB RDS TBR	8337	- ANNA FLYNN ALT CLC HRB OLG REC RNG TBR WLD WRA
6328	- ROBERT FLEAGENS: CLC RNG WLD WRA	7577	- BILL FLYNN ALT CLC ECN OLG RNG TBR VIS WRA
10028	- LAURIE FLECK CLC GEN HRB TBR	7122	- THERESA FLYNN ALT CLC ECN OLG RNG TBR VIS WRA
148	- ANN FLEENOR' ALT CLC FLE HRB	6789	- DAVID FOGLE ALT CLC HRB OLG REC RNG TBR WLD WRA
4866	- ANN FLEENOR ALT CLC ECN GEN OLG RNG TBR VIS WRA	11509	- LEE FOGLESONG CLC DRT HRB
6969	- ANN FLEENOR. ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	5514	- JONATHAN FOHRMAN' ALT CLC TBR WRA
4865	- DAVE FLEENOR. ALT CLC ECN OLG RNG TBR VIS WRA	1489	- ALBERT L FOLCHI RDS RNG TBR
5622	- DAVID FLEENOR ALT CLC HRB OLG REC RNG TBR WLD WRA	1317	- CAROL FOLCHI GEN WRA
149	- JOHN FLEENOR. TBR	2119	- DALE FOLCHI. ECN TBR WRA
5101	- MO FLEENOR ALT CLC FSH HRB OLG REC RNG TBR WLD WRA	2888	- KIMBERLEY L FOLCHI TBR
6965	- MO FLEENOR ALT CLC HRB OLG REC RNG TBR WLD WRA	1084	- TONY FOLCHI ECN RNG
1063	- RACHAELA FLEET ALT CLC ECN REC WIN WLD WRA	11335	- TONY FOLCHI' LND RNG
10457	- T APUL FLEHT ALT CLC TBR WRA	3984	- TIMOTHY FOLEY ALT CLC TBR
990	- NANCY FLEISCHAUER CLC	2663	- MELVIN FOLLIS ECN TBR
3137	- ANN FLEMING CLC FSH HRB TBR	3882	- FRANCIS R FOLMER ALT CLC HRB OLG TBR WLD WRA
9990	- DAVID FLEMING ALT CLC TBR WRA	429	- FRANCIS RAY FOLMER ECN TBR VIS WLD
8468	- DONALDA FLEMING REC WRA	465	- HANNAHW. FOLSOM CLC ECN FLE HRB REC RNG TBR VIS
7531	- MARY FLERICH ALT CLC HRB OLG REC RNG TBR WLD WRA	707	- STEPHEN FOLSOM TBR
566	- EVAN FLETCHER. CLC HRB TBR	2972	- KENNETH R FONE ALT CLC ECN HRB OLG TBR WLD WRA
1640	- P FLETCHER CLC WRA	7396	- BENNY FONG CLC OLG TBR WRA
2754	- PLUBE FLETCHER. CLC ECN RDS RNG TBR VIS	9888	- DANIEL R. FONTI' CLC HRB
10942	- EVAN M FLETCHER (PETITION). ALT CLC ECN HRB TBR WRA	11369	- DANIEL R FONTI' CLC HRB
20500	- AUDREY FLINT TRL	2192	- CHRIS FOOTE CLC
11934	- CAROL FLINT' ALT CLC FLE GEN HRB RDS RNG	5321	- JENNIFER FOOTE. ALT CLC HRB OLG REC RNG TBR WLD WRA
6053	- ESTHER FLISTER ALT CLC HRB OLG REC RNG TBR WLD WRA	2086	- FORBUSCO LUMBER CRAIG L BERRY TBR
6360	- FAIRAH NICOLE FLOOD ALT CLC HRB OLG REC RNG TBR WLD WRA	11078	- DAVID FORD ECN TBR
9543	- LISA J FLORENCE CLC	2652	- DAVID A FORD ECN PLNTBR
6014	- JENNIFER FLORES ALT CLC HRB OLG REC RNG TBR WLD WRA	5418	- MR & MRS DON E FORD CLC H2O HRB REC TBR VIS
10573	- RALPH FLORES ECN TBR	4419	- EDWARD FORDER TBR
2620	- WILFRED FLORES. TBR WRA	7647	- PATRICIA D FORE ALT CLC TBR WRA
5199	- NORMA FLORIAN ALT CLC ECN OLG RNG TBR VIS WRA	1189	- MICHAEL FOREMAN GEN
11029	- MIKE FLOURNOY ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	11330	- FOREST ISSUES TASK FORCE STEVE BECK-WITT CLC DRT FSH H2O OLG OWL RDS REC RNA RNG SNP TBR TRL VIS WLD WRA WSR
8729	- FLOWER ESSENCE SOCIETY RICHARD KATZ & PATRICIA KAMINSKI' CLC ECN HRB RDS	2899	- FOREST SLOPES MANAQEMNT DOUGLAS C FERRIER GEN TBR
9249	- DORIS S. FLOWERS CLC H2O HRB REC TBR VIS	4660	- A. FORESTER ALT CLC TBR WRA
7757	- JAMES FLOWERS ALT CLC HRB OLG TBR WLD WRA	3323	- FORESTHILL FORUM GEORGE GRANT. ALT ECN
4561	- LEE ANN FLOWERS AIR ALT CLC HRB OLG REC TBR WLD WRA	1170	- JOHN FORNO ECN TBR
11048	- STEVE FLOWERS ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	157	- KIRT D FORREST. WIN
		9730	- CHARLETTE FORSELIUS ALT CLC ECN OLG RNG TBR VIS WRA
		10544	- MICHELLE FORSELIUS CLC GEN HRB TBR
		8617	- KARL FORSGAARD CLC RDS REC TBR
		10760	- MARIA & EDWARD FORSTER & ROBERTS CLC H2O HRB REC TBR VIS
		11170	- JERRY & ELINOR FORSTES CLC TBR
		9245	- P L & BEATRICE FORSYTHES CLC H2O HRB REC TBR VIS

7268	- JAMES N FORTIN ALT CLC TBR WRA	756	- ROBERT E FRANCK ECN OLG TER
7290	- KATE FORTIN ALT CLC TBR WRA	6135	- DOUGLAS FRANK ALT CLC TBR WRA
5212	- SHEILA FORTNER ALT CLC HRE OLG REC RNG TBR WLD WRA	3801	- ELLEN FRANK ALT CLC OLG VIS WRA
7099	- CAROLYN FORYETTE ALT CLC HRE OLG REC RNG TBR WLD WRA	9339	- SUSAN C FRANK CLC H2O HRB REC TER VIS
6377	- BRIDGET FOSTER ALT CLC HRE OLG REC RNG TBR WLD WRA	9995	- TIM FRANKLIN ALT CLC TBR WRA
1379	- CHARLES FOSTER TBR	651	- DAVID FRANKS ECN
2082	- JIM FOSTER GEN	3402	- HEIDI FRANSEN CLC HRB RNG TBR WLD WRA
6781	- KATE FOSTER ALT CLC HRB OLG REC RNG TBR WLD WRA	3950	- HEIDI FRANSEN CLC HRB RNG WLD WRA
2667	- KEN FOSTER CLC OLG WRA	2151	- WALT FRASER CLC ECN REC
5066	- LEONARD FOSTER ALT CLC HRB OLG REC RNG TBR WLD WRA	9703	- WARREN FRATIANNO ALT CLC ECN OLG RNG TBR VIS WRA
872	- LOREN E FOSTER ECN RECTBR	4701	- DAVID FRAZEE CLC TBR
10686	- MARY L FOSTER ALT CLC ECN OLG RNG TER VIS WRA	5332	- DAWN FRAZER ALT CLC HRB OLG REC RNG TBR WLD WRA
665	- MR & MRS B FOSTER ECNTBR	5639	- KAREN FRAZER ALT CLC HRE OLG REC RNG TBR WLD WRA
6853	- S E FOSTER CLC TBR	2418	- CHRISTINA R FRAZIER ALT CLC HRB OLG REC TBR WLD WRA
3500	- WILLIAM F FOSTER CLC TBR	10709	- LESLIE C FRAZIER ALT CLC TBR WRA
6853	- RUSS FOUGERONSSE CLC TBR	4507	- MR & MRS. FRAZIER REC
6517	- MARY FOUNTAIN ALT CLC HRB OLG REC RNG TBR WLD WRA	7021	- JODY B. FREASE ALT CLC TBR WRA
2231	- DON FOURIER ECN TER	9949	- TONY FREDERICK CLC GEN HRB TER
6909	- LISA FOURNIE ALT CLC TBR WRA	1597	- J FREDERICKS CLC ECN TBR
3607	- GARY A FOUYER ECN TER WRA	20449	- W R FREDERICK HS F LND PLN TBR VIS
4436	- MIKE FOUYER GEN TBR	6783	- KATHRYN FREDRICKS ALT CLC HRB OLG REC R TER WLD WRA
11391	- NIEL FOWERS CLC	3433	- HAROI & THELMA FREDRICKSEN CLC OLG TBR TRL WIN WRA
4553	- CATHERINE FOWLER CLC HRB TBR WRA	4336	- CHRISTINE FREDRICKSON CLC OLG REC TBR WRA
5365	- DEBORAH FOWLER ALT CLC ECN OLG RNG TBR VIS WRA	7422	- LANA J FREDRICKSON ALT CLC HRB OLG REC RNG TER WLD WRA
9740	- ERNEST FOWLER ALT CLC ECN OLG RNG TBR VIS WRA	4283	- JOY FREE REC TBR TRL WIN WRA
2229	- JOHN M FOWLER ECN TBR	6891	- C E FREEBURN ALT CLC ECN OLG RNG TBR VIS WRA
7578	- JUANITA FOWLER ALT CLC ECN OLG RNG TBR VIS WRA	2326	- REAFREEDOM CLC
8905	- KATHY FOWLER ALT CLC ECN OLG RNG TBR VIS WRA	4420	- VICTOR FREELAND ECN REC TBR
88	- MARK FOWLER H2O	8163	- DAVID FREEMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
5367	- MICHELE FOWLER ALT CLC ECN OLG RNG TBR VIS WRA	2892	- HERBERT F FREEMAN CLC
82	- PATRICIA FOWLER ALT CLC H2O HRB RDS RNA TBR WIN	1309	- IRENE J FREEMAN ALT CLC ECN HRE OLG REC TBR VIS WLD
3500	- RICHARD N FOWLER CLC TBR	9873	- MARY L FREEMAN ALT CLC HRB OLG TBR WLD WRA
9116	- ANDREA FOX ALT CLC H2O HRB OLG REC RNG TBR WLD WRA	10593	- MARY L FREEMAN ALT CLC HRB OLG TBR WLD WRA
5625	- BARBARA FOX ALT CLC HRB OLG REC RNG TBR WLD WRA	3021	- MRS. DONALD FREEMAN REC
133	- BRENT FOX AIR CLC ECN GEN H2O HRE RDS TBR WLD	6747	- ROBERT & IRENE FREEMAN REC
1449	- JOHN FOX CLC TER	9411	- SAM FREEMAN ALT CLC ECN OLG RNG TBR VIS WRA
10830	- JUDITH FOX CLC OLG TBR WRA	2023	- JULIE FREEMYERS ALT ECN GEN
7745	- SUSHEELA FARRELL ALT CLC HRB OLG REC RNG TBR WLD WRA	1785	- DEBRA FREESE CLC
3640	- LOUISE J FRAME CLC ECN TBR	8547	- SHIRLEY R FREESE ALT CLC ECN OLG RNG TBR VIS WRA
4453	- CYNTHIA FRAMPTON ALT CLC HRB OLG REC RNG TBR WLD WRA	2951	- LAURA FREGOSO TER
2625	- CALVIN FRANCIS OWL TBR	264	- DAN FREIDERS CLC TBR WRA
1258	- JOHN FRANCIS LND	8206	- RHODA FREIER ECN RDSTER
9955	- KRIS FRANCIS CLC GEN HRE TBR	9405	- SHIRLEY FREIFELD ALT CLC ECN OLG RNG TER VIS WRA
8199	- MARY FRANCIS ALT CLC HRB OLG TBR WLD WRA	4354	- MRS. E FREITAS REC
3502	- GERALDINE FRANCISCO CLC HRB REC TER TRL VIS	7709	- PAUL FREITAS ALT CLC ECN OLG RNG TBR VIS WRA

1289	- WALTER & FAMILY FREITAS: RDS TBR TRL	668	- FLOYD FRYE ALT TBR WRA
444	- CAROLYN FRENCH CLC TBR TRL WRA	1898	- BRET FUDALA ECN REC
9592	- CAROLYN FRENCH CLC HRB TBR	1897	- DAVID P FUDALA TBR
1558	- JACK FRENCH GEN TBR	1899	- JAMES FUDALA ECN REC TBR
6851	- SHELLY FRENCH TBR	1895	- JASON & DLANA FUDALA ECN
6864	- THOMAS R & PATRICIA FRENCH ALT CLC ECN GEN TBR WRA	10656	- JAKE FUENTES ALT CLC ECN OLG RNG TBR VIS WRA
5788	- MARY LORI FRENDEL ALT CLC HRB OLG REC RNG TBR WLD WRA	4039	- J M FUERST FLE H 20 HST REC TBR
4222	- ARTHUR FRENZEL CLC	6703	- DICK FUGETT TBR
8888	- SCOT FRETREE ALT CLC ECN OLG RNG TBR VIS WRA	9311	- CHRIS FUJIBUS CLC H20 HRB REC TBR VIS
4897	- SANUEL FREURW ALT CLC HRB OLG REC RNG TBR WLD WRA	1804	- ROBERT H FUIT RDS
5603	- ARTHUR FREUZEL ALT CLC HRB OLG REC RNG TBR WLD WRA	3745	- GERALD FUJII OLG RNG TBR WSR
363	- DONALD FRW CLC OLG TBR WRA	2809	- JY FUJII CLC ECN FSH GEN HRB TBR
3017	- URSULA FREYMANN ALT CLC HRB OLG TBR WRA	11259	- JERRY FUJII FSH GEN OLG REC WRA WSR
11770	- URSULA FREYMANN ALT CLC HRB OLG TBR WRA	2869	- LAURA FUJII CLC FLE HRB TBR WRA
4332	- GARRETT FRICKE ALT RNG TBR TRL VIS WRA	3635	- NANCY FUJII CLC ECN TBR
1078	- KATHRYN FRIEBUS CLC	7098	- NANCY FUJII ALT CLC HRB OLG REC RNG TBR WLD WRA
3234	- JEREMY FRIED CLC GEN OLG RNG TBR	9375	- NANCY FUJII CLC FSH H20 TBR WLD
3937	- JEREMY FRIED OLG RDS RNG TBR	2212	- NANCY FUJII R D CLC LND OLG RDS TBR WRA
6853	- CHERYL FRIEDEL CLC TBR	3140	- ROY FUKUSHIMA CLC ECN FSH GEN HRB TBR
2991	- LARRY FRIEDMAN CLC	5137	- COLEEN FULLER ALT CLC HRB OLG REC RNG TBR WLD WRA
7190	- LEANNE J FRIEDMAN ALT CLC TBR WRA	4331	- DANA FULLER ALT CLC HRB OLG REC RNG TBR WLD WRA
6193	- MITCH FRIEDMAN ALT CLC HRB OLG REC RNG TBR WLD WRA	1186	- DOROTHY FULLER CLC RDS WRA
6258	- SUSAN FRIEDMAN ALT CLC GEN TBR WRA	1192	- L W FULLER CLC RDS WRA
10094	- WARREN FRIEDRICH ALT CLC ECN OLG RNG TBR VIS WRA	11509	- MICHAEL FULLER CLC DRT HRB
8645	- FRIENDS OF 1 RNER BEATRICE COOLEY CLC FLE GEN HRB RDS REC RNG TBR TRL WSR	9628	- TIFFANY FULLER ALT CLC TBR WRA
1786	- RON FRIESEN ALT	9406	- EARL FULLMER ALT CLC ECN OLG RNG TBR VIS WRA
3486	- CORA FRINKANS ALT CLC TBR WRA	4196	- ANN FULWEILER ALT CLC HRB OLG REC RNG TBR WLD WRA
10007	- KAREN FRISPEE CLC GEN HRB TBR	3M7	- JUDITH A FUNK CLC FLE HRB OLG
1656	- DOUG FRITCH CLC RDS WSR	3133	- MICHAEL FUNK ALT CLC ECN HRB OLG TBR WLD WRA
9000	- BRUCE FRITZ ALT CLC HRB OLG REC RNG TBR WLD WRA	1188	- RODNEY L FUNK CLC ECN H20 OLG RDS TBR TRL VIS
4451	- CHARLES FRITZ CLC FLE H20 REC VIS WLD	6203	- THOMAS FUNK ALT CLC ECN OLG RNG TBR VIS WRA
6559	- DAVID FRITZ ALT CLC GEN H20 HRB OLG REC TBR WLD WRA	2404	- VERNA M. FUREYS CLC TBR
12167	- CHARLES FRITZ, M D	9970	- JEFF FURGINSON CLC GEN HRB TBR
4448	- ROBERT FROELICK CLC ECN HRB OLG REC TBR WRA	1066	- SANDY FURLICH ALT CLC ECN HRB OLG RDS RNG TBR WSR
10031	- TRACY FROESE CLC GEN HRB TBR	1739	- SANDY FURLICH CLC ECN HRB TBR VIS WRA
1365	- GARY FROHREICH CLC OLG WRA	1276	- SANDY FURLICH CLC ECN OLG TBR WLD
1212	- CHRISTINA L FROST CLC	5695	- DARTH FURN ALT CLC HRB OLG REC RNG TBR WLD WRA
6046	- SANDRA FROST ALT CLC ECN OLG RNG TBR VIS WRA	4098	- JOHN FURNAS GEN REC TBR TRL WIN WRA
10967	- LEO & CATHY FROST ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA	10931	- FURNITURE BY THURSTON LEE J THURSTON ALT CLC ECN HRB OLG REC TBR
2907	- JOE FRUGER CLC HRB LND OLG RNG TBR TRL WRA WSR	7530	- SUSANNE FURREL ALT CLC HRB OLG REC RNG TBR WLD WRA
1064	- DIANE R FRUTOS ALT CLC HRB OLG WRA	1994	- DONALD E FURRY ALT ECN GEN
10691	- ROBERT FRUTOS ALT CLC ECN OLG RNG TBR VIS WRA	4054	- HAROLD FURST ALT CLC RDS
2965	- ELIZIBETHS FRY ALT CLC HRB OLG TBR WLD WRA	8953	- JANA FURTADO ALT CLC ECN OLG RNG TBR VIS WRA
2942	- WILLIAM F FRY, JR , M D ALT CLC ECN HRB OLG TBR WLD WRA	8951	- MICHAEL FURTADO ALT CLC ECN OLG RNG TBR VIS WRA
5760	- STEFANI FRYDOUT ALT CLC HRB OLG REC RNG TBR WLD WRA	4276	- JENNIFER FURY CLC TBR
		3819	- RICHARD FUXYGAN CLC
		9822	- SUZANNE G CLC DRT OLG TBR WRA
		4497	- G A S P MAXINE BANE ALT CLC ECN H20 HRB OLG RNG TBR VIS WRA
		1756	- G A S P ARLENE HUDSON ALT CLC FLE HRB OLG RDS REC RNG TBR

1951	- CHARLOTTE GABRIEL CLC HRB	1309	- KARENA GARCIA ALT CLC ECN HRB OLG REC TBR VIS WLD
5853	- CHARLOTTE GABRIEL ALT CLC HRB OLG REC RNG TBR WLD WRA	2578	- P J GARCIA TBR
1980	- JOLEN GABRIEL CLC	5341	- PACO GARCIA ALT CLC ECN OLG RNG TBR VIS WRA
6710	- ELIZABETH L GADE CLC TBR	3230	- PATRICIA GARCIA CLC ECN HRB TBR
1946	- PETE GAFFNEY CLC REC	5504	- SALUD GARCIA ALT CLC TBR WRA
10941	- KATHERINE GAGNE ALT CLC ECN HRB TBR WRA	3533	- KEN GARDELLEI CLC H2O HRB TBR VIS WRA
1034	- MARK GAILEY CLC TRL WLD	6265	- CHRISTOPHER GARDENER ALT CLC ECN TBR WRA
11008	- MARKS GAILEY ALT CLC ECN FSH H2O HPB SNP TBR TRL WLD WRA	6260	- KYRA GARDENER ALT CLC ECNTBR WRA
9924	- MELISSA GAINER CLC GEN HRB TBR	2294	- BILL GARDINER ECN RDS WRA
3400	- GEORGE GALAMBAR CLC TBR	7044	- KAREN R GARDINER ALT CLC TBR WRA
7747	- KAREN GALE ALT CLC HRB OLG REC RNG TBR VIS WLD WRA	663	- HERBERT G GARDNER ECN
11509	- KENNETH GALL CLC DRT HRB	8872	- JOHN GARDNER ALT CLC HRB OLG REC RNG TBR WLD WRA
6893	- DESMOND GALLAGHER ALT CLC ECN OLG RNG TBR VIS WRA	7983	- M J GARIERD ALT CLC HRB OLG REC RNG TBR WLD WRA
7200	- DESMOND GALLAGHER ALT CLC ECN OLG RNG TBR VIS WRA	6971	- MICHAEL GARITHY ALT CLC HRB OLG REC RNG TBR WLD WRA
10502	- PAT GALLAGHER CLC	6968	- JANN GARITTY ALT CLC HRB OLG REG RNG TBR WLD WRA
1062	- PATRICK GALLAGHER TBR WRA	8744	- MICHAEL GARITTY HRB OLG
11509	- PENELOPE GALLAGHER CLC DRT HRB	11292	- MICHAEL GARITTY ALT HRB OLG
1100	- STEVEN K. GALLANTHINE CLC DRT FSH RDS VIS	7060	- SHANNON GARITTY ALT CLC HRB OLG REC RNG TBR WLD WRA
1712	- LINDA C GALLARDA CLC ECN HRB TBR VIS WRA	1065	- MARSHA GARLAND ALT CLC FLE HRB TBR WLD
8589	- ADAM GALLER CLC OLG TBR WRA	359	- ANDREW GARLING, M D CLC
3148	- ALBERTA E GALLEZ' ECN TBR	1347	- KAREN GARLOW CLC FLE GEN HRB
3151	- ARTHURA GALLEZ TBR	4154	- MARY LOU GARMAN ALT CLC ECN
10626	- BERIKA E GALLOWAY CLC H2O HRB REC TBR VIS	4749	- RON GARMAN ALT CLC FLE OLG RDS REC TBR VIS
8875	- MARIALICE GALT ALT CLC ECN OLG RNG TBR VIS WRA	9550	- FRED GARNER CLC
8550	- DEBORAH GALUB CLC ECN OLG TBR VIS WRA	5909	- ROBERT GARNER CLC HRB OLG
9902	- CHRIS GALVEZ CLC OLG TBR WRA	9607	- ERIN D GARNEY ALT CLC TBR WRA
3472	- WILLIAM GALYON CLC HRB VIS	8316	- JULIE A GARNSEN ALT CLC HRB OLG REC RNG TBR WLD WRA
6232	- WILLIAM GALYON ALT CLC HRB OLG REC RNG TBR WLD WRA	3467	- ANNE GARRETT CLC TBR
11786	- WILLIAM R GALYON CLC HRB RDS REC TBR	10511	- ETHEL GARRETT CLC HRB
591	- EUGENE D GAMBUCETTI ECN TBR	5718	- JANN GARRITTY ALT CLC HRB OLG REC TBR
8327	- MARIEL GAMEZ' ALT CLC HRB OLG REC RNG TBR WLD WRA	3500	- DAVID & LYNETTE GARTON CLC TBR
8461	- ANN GAMK ALT CLC ECN OLG RNG TBR VIS WRA	215	- LYDIA GARVEY CLC HRB RDS
1104	- GANDL FILMS GREGG SCHIFFNER CLC HRB REC TBR	884	- LYDIA GARVEY CLC ECN HRB LND OLG RDS RNG TBR TRL WIN WLD
10	- DR REGINA GANDOUR CLC TBR WRA	3764	- MRS S. GARWOOD ALT CLC HRB OLG TBR WLD WRA
10549	- LORAL GANES CLC GEN HRB TBR	6545	- MANUEL GARZA ALT CLC ECN OLG RNG TBR VIS WRA
9403	- MARCIA GANES ALT CLC ECN OLG RNG TBR VIS WRA	6540	- RACHEL GARZA ALT CLC ECN OLG RNG TBR VIS WRA
3353	- MICHAEL GANNEN TBR	4916	- RICHARD GARZA ALT CLC ECN OLG RNG TBR VIS WRA
9175	- BETTY GANNON ALT CLC ECN OLG RNG TBR VIS WRA	3413	- STEVE GASAWAY ALT
10616	- RICHARD GANVILLE CLC H2O HRB REC TBR VIS	4270	- JAY GASBON CLC TBR
9027	- JOHN GARAINEZ ALT CLC HRB OLG REC RNG TBR WLD WRA	1935	- GASP ARLENE HUDSON CLC FLE HRB REG
6502	- BILL GARANED' ALT CLC ECN OLG RNG TBR VIS WRA	1935	- GASP JACQUELINE PLATTÉ CLC FLE HRB REC
3912	- GAYLE GARBRICK ALT CLC ECN OLG RNG TBR VIS WRA	5093	- GASP CHRISEDA SMITH CLC FLE HRB REC
4548	- SHARON GARBRICK ALT CLC ECN OLG RNG TBR VIS WRA	8548	- ROBERT M GASSAWAY ALT CLC HRB OLG REC RNG TBR WLD WRA
8661	- JO GARCEAU CLC DRT HRB	8549	- VICTORIA GASTINI ALT CLC ECN OLG RNG TBR VIS WRA
11938	- GABRIEL GARCIA OLG	8846	- DAVID M GASTONI ALT CLC ECN OLG RNG TBR VIS WRA
6006	- KAREN GARCIA ALT CLC ECN OLG RNG TBR VIS WRA	6532	- ANDREA GATES ALT CLC ECN OLG RNG TBR VIS WRA
			- CAROL GATES ALT CLC ECN H2O OLG RNG TBR VIS WRA

4010	JENNIFER GATES. ALT CLC HRB OLG REC RNG TBR WLD WRA	6431	- BOB GEORGIA ALT CLC ECN OLG RNG TBR VIS WRA
1273	LILY GATES ALT CLC RDS RNG	2365	- GEORGIA-PACIFIC RESINS WAYNE H BOND ECN TBR
11208	ROBERT A GATES TBR VIS	20500	- DORCASA GERACE TRL
11884	CARLA GATT FSH TBR	9572	- BONITA GERAMAYER CLC H20 HRB REC TBR VIS
5448	CARLA J GATT ALT CLC HRB OLG TBR WLD WRA	9844	- TODD M GERARD ALT CLC TBR WIN WRA
3576	STEVEN GAU ALT CLC HRB OLG TBR VIS WLD WRA	4291	- KATHY GERB ALT CLC ECN OLG RNG TBR VIS WRA
10716	- KATHLEEN M GAUBT ALT CLC TBR WRA	7033	- DIANE GEREKE ALT CLC TBR WRA
11897	- KENNETH GAUGLER. ALT CLC ECN HRB	10602	- PAULINE GERGGREN CLC H20 HRB REC TBR VIS
8637	- BRIAN GAUNGN CLC ECN FAC HRB MIN PLN RNG TBR VIS	3621	- ARLENE GERHARD ALT CLC TBR WRA
6721	- KEVIN GAUTHER CLC OLG	4155	- DAVID GERHARD ALT CLC TBR WRA
7428	- SAMUEL GAVIN ALT CLC HRB OLG REC RNG TBR WLD WRA	179	- MARILYN GERHARD TBR
4556	- ANA GAVOZDEA ALT CLC GEN HRB OLG TBR WLD WRA	3880	- MILO GERHARD ALT CLC TBR WRA
4982	- VAL GAVOZDEA ALT CLC GEN HRB OLG TBR WLD WRA	3215	- EMMA GERHART ALT CLC HRB OLG TBR WLD WRA
11532	- DAVID A GAVRICH CLC GEN	846	- MRS EMMA S GERHART CLC ECN LND REC TBR
2336	- DOROTHY W GAY. CLC ECN FSH OLG TBR	2124	- JAMES R GERKEN ALT
3750	- R & L GAYDOS ALT CLC ECN OLG RNG TBR VIS WRA	5129	- JEFF GERKIN ALT CLC HRB OLG REC RNG TBR WLD WRA
5128	- STEFANIE GECKLER ALT CLC HRB OLG REC RNG TBR WLD WRA	5120	- TODD GERMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
3019	- NANCY GEDDES CLC HRB	7525	- LENATERY M GERN ALT CLC HRB OLG REC RNG TBR WLD WRA
7431	- CYNTHIA GEDDINGS ALT CLC HRB OLG REC RNG TBR WLD WRA	11716	- PAULETTE GERMANDEZ GEN
7430	- SARAFONE GEDDINGS ALT CLC HRB OLG REC RNG TBR WLD WRA	2780	- KATHY GERNER CLC
1320	- RICHARD W GEERTSEME & CLAUDE DAILEY ECN TBR	6004	- ARAN GEROUX ALT CLC ECN OLG RNG TBR VIS WRA
6852	- RICHARD M GEHRIG CLC TBR	8752	- ROBERT GERSHENOW ALT CLC ECN OLG RNG TBR VIS WRA
6854	- NANCY GEIGER ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	19144	- ERIC GERSTONG CLC ECN REC SIA TBR VIS WRA
6627	- KENNETH D. GEIL. CLC TBR	20015	- ERIE GERSTURG. ALT GEN H20 RDS SIA TBR VIS WRA
6669	- JOHANNA GEILHAFE ALT CLC ECN OLG RNG TBR VIS WRA	411	- LES GERTON OLG OWLTBR
3907	- KAREN GEISLER ALT CLC HRB OLG REC RNG TBR WLD WRA	2961	- B J GERVING CLC TBR
53	- DOUG GELDIEN & FAMILY, ALT CLC HRB RDS	6498	- CHRIS GESSEL ALT CLC HRB OLG REC RNG TBR WLD WRA
5783	- CHARLENE M GELLER ALT CLC HRB OLG REC RNG TBR WLD WRA	6394	- GARY GESTER ALT CLC ECN OLG RNG TBR VIS WRA
1172	- CARL GENASCI. RD 3 TBF	10295	- ERICA GETLER ALT CLC TBR WRA
5586	- SUSAN GENDELL. ALT CLC HRB OLG REC RNG TBR WLD WRA	4671	- DARMAN GETMAN ALT CLC TBR WRA
4320	SANDRA GENOCHIO. ALT CLC HRB OLG TBR WLD WRA	4670	- LESLIE GETMAN ALT CLC TBR WRA
1493	BRAD GENT. GEN TBR WRA	7580	- RICHARD GETTER. ALT CLC ECN OLG RNG TBR VIS WRA
5489	ARTHUR GENTRY. ALT CLC ECN OLG RNG TBR VIS WRA	2387	- GREG GETTY. ALT CLC ECN HRB TBR
6427	BARBARA GENTRY ALT CLC ECN OLG RNG TBR VIS WRA	2170	- BARBARA G E E CLC FLE GEN HRB RNG TBR TRL
10771	CAROLYN GEOFFORSEG ALT CLC HRB OLG TBR WLD WRA	2466	- BARBARA GETZ CLC ECN TBR WRA
9508	JEAN GEOFFROY. CLC HRB TBR	11255	- BARBARA GETZ CLC ECN HRB REC TBR WLD WRA
2655	FRAN & A GEORGE ALT CLC REC TBR	5794	- MICHAEL GETZ. ALT CLC HRB OLG REC RNG TBR WLD WRA
2230	SCOT & SIA ALT CLC ECN HRB OLG TBR WLD WRA	3870	- MIKE G E E CLC HRB TBR VIS
1346	SUSAN & RICHARD GEORGE CLC GEN HRB TBR WRA	6619	- ALAN GEYER CLC RDS
3345	GERHARD GEORGI. ALT CLC HRB OLG TBR WLD WRA	7113	- NEIL GEYUOY. ALT CLC ECN OLG RNG TBR VIS WRA
3840	GERHARD GEORGI ALT CLC HRB OLG REC TBR WLD WRA	6388	- TONY GHIA ALT CLC ECN OLG RNG TBR VIS WRA
8138	MAGGIE GEORGI OLG RDS RNG TBR TRL WLD WRA	505	- ERIC GIAZZARD CLC ECN HRB REC TBR
		2259	- BRIAN GIBBS GEN
		153	- SUSAN, BERT & BARBARA GIBBS CLC ECN HRB TBR

2405	DAVID R GIBS. ECN TER	3649	- HARVEY W GLAMUZINA. ALT CLC HRE OLG
719	CLARENCE O GIBSON. TBR		RDS TBR WLD WRA
321	INA GIBSON GEN TBR VIS WRA	10491	- ROBERT GLANBUREN. ALT CLC TBR WRA
3623	MRS WELDON GIBSON ALT CLC WRA	6511	- MRS GLANINICH ALT CLC ECN OLG REC
6358	RON GIBSON ALT CLC HRB OLG REC RNG		RNG TBR VIS WRA
	TBR WLD WRA	3536	- BARNEY GLASER REC
9839	STEVEN L GIBSON ALT CLC TBR WRA	4482	- LORI GLASS ALT CLC ECN OLG RNG TER VIS
381	CAROL GICKER REC RNG TBR WRA		WRA
4232	JEREMY GICKER CLC HRB TBR	6685	- STEVEN GLASS ALT CLC ECN OLG RNG TBR
8109	BARBARA GIELLER CLC H2O HRE OLG REC		VIS WRA
	WIN WRA	7863	- TERRI GLAZZARD ALT CLC HRB OLG REC
340	VIRGINIA GILARDI CLC		RNG TBR WLD WRA
6715	AMOS GILBERT ALT CLC ECN GEN HRE TER	6320	- DONNA GLEASON ALT CLC HRE OLG TBR
9219	DANIEL & JEAN GILBERT CLC H2O HRB REC		WLD WRA
	TBR VIS	8727	- GARY GLEASON CLC HRB REC WRA
3138	JAKE GILBERT CLC	5123	- KRISTY GLEASON ALT CLC HRB OLG REC
4250	- JAKE GILBERT ECN TBR		RNG TBR WLD WRA
6939	- LORY E GILBERT ALT CLC TER WRA	5997	- KRISTY GLEASON ALT CLC HRB OLG REC
6161	- NANCY L GILBERT ALT CLC ECN OLG RNG		RNG TBR WLD WRA
	TBR VIS WRA	8690	- ALBERT S GLENN. CLC RDS RECTBR TRL
9139	- STEVE GILBERT. H2O TBR		WRA
1893	- WILLIAM A GILBERT ECN GEN	7522	- PATRICIA GLENTY. ALT CLC HRB OLG REC
8065	- TAMMY GILBRETTE ALT CLC TBR WRA		RNG TBR WLD WRA
7421	- GARTH GILCHRIST ALT CLC HRB OLG REC	595	- PATRICIA GLENTZ ALT CLC FLE HRB OLG
	RNG TER WLD WRA		RNG TBR TRL WRA
5713	- SHEILA GILCHRIST, ATTY CLC HRB OLG WRA	4650	- PATRICIA GLIDENTOPPE ALT CLC TBR WRA
9313	- DEBORAH GILCREST ALT CLC RDS RECTER	10178	- GINNY GLISSMAN. CLC
	TRL	6643	- JANICE L GLOE CLC
9064	- DAVID GILERIE ALT CLC TBR WRA	6082	- KATHERINE A GLOWES CLC HRB TBR
6853	- RUSSELLT GILES CLCTBR	3699	- BRUCE GLUDICI. CLC OLG TER WRA
5512	- CHRIS GILKERSON. ALT CLC TER WRA	8368	- EMIL GLUEKLER' ALT CLC HRB OLG REC
3595	- CHRISTINE GILKERSON ALT CLC HRB OLG		RNG TER TRL WLD WRA
	REC RNG TBR WLD WRA	8595	- LYNN GNIGGS TER WRA
7669	- MARI GILL CLC OLG TER WRA	6853	- CHUCK GOAD CLC TER
4602	- ROSEMARY GILL ALT CLC TER WRA	5371	- DAN GODWIN' ALT CLC ECN OLG RNG TER
2238	- JOHN GILLER ALT CLC HRB TBR WLD WRA		VIS WRA
1200	- LAWRENCE GILLESPIE CLC RECTBR	8535	- MILDRED GODWIN ALT CLC ECN OLG RNG
6042	- CLINTON GILLETTO ALT CLC ECN OLG RNG		TBR VIS WRA
	TBR VIS WRA	9194	- THOMAS P GODWIN ALT CLC ECN OLG RNG
3581	- H GILLE'ITE. CLC ECN TBR		TER VIS WRA
11731	- H. GILLE'ITE CLCTBR	10665	- ELIZABETH GOERTZ. ALT CLC ECN OLG RNG
3582	- JANICE GILLE'ITE CLC TRL		TER VIS WRA
11730	- JANICE GILLE'ITE CLC TBR TRL	11422	- STEPHANIE M GOFF. CLC FSH OLG RECTBR
35W	- MARLENE GILLHAND CLC TER	5820	- SYRA GOFFE ALT CLC HRB OLG REC RNG
10301	- SUE GILLMING ALT CLC ECN OLG RNG TBR		TBR WLD WRA
	VIS WRA	3251	- FRED GOIN REC
4539	- MICHAEL GILLOGLY CLC HRE OLG TBR WRA	3406	- BRIANGOINER CLC ECN FAC HRB MIN PLN
2440	- FRANCES & INEZ GILLUM ECN		RNG TER VIS
3246	- MRS. P K GILMAN CLC GEN OLG TBR	4129	- ERNEST GOITEIN' ALT CLC GEN
3922	- MRS P K GILMAN CLC GEN OLG REC TER	11809	- DI & GARY GOLD ALT
	WLD	4218	- GOLD COUNTRY CA LOGGERS MAX
9263	- MARC GIOIA CLC H2O HRB TBR VIS		WILLIAMSON ALT CLC ECN LND REC RNG
1468	- ROBERT & VIRGINIA GIORGIO ALT CLC GEN		WIN
	HRE RDS TBR TRL VIS WLD WRA	1305	- GOLD COUNTRY TRAILS COUNCILW BRUSIN
6435	- VIRGINIA GIORGIO ALT CLC ECN OLG RNG		ECN REC TBR TRL VIS WRA
	TBR VIS WRA	11085	- GOLD LAKES LODGE PETER THILL GEN
1977	- ELIZABETH GIPS CLC	7670	- JO GOLDBERG CLC OLG TER WRA
2348	- WAYNE GIPSON TBR	8478	- SUSAN L GOLDBERG CLC ECN
7134	- JEAN GISHNER ALT CLC HRB OLG REC RNG	1350	- MIKE GOLDEN CLC FSH TRL WSR
	TBR WLD WRA	11885	- MIKE GOLDEN CLC ECN
4924	- ANDREA GISSELL ALT CLC HRB OLG REC	1542	- MR & MRS HAROLD GOLDEN. CLC GEN TBR
	RNG TBR WLD WRA	7824	- STACY GOLDBERG' ALT CLC TBR WRA
3494	- MR & MRS C J GISSELL CLC	8181	- SYD GOLDFARF ALT CLC HRB OLG REC RNG
4372	- RICHARD GIST CLC H2O		TBR WLD WRA
7180	- JAN GLADFETTER ALT CLC TER WRA	5978	- MICHAEL GOLDMAN ALT CLC HRB OLG REC
11019	- R GLADSTAR ALT CLC ECN FSH H2O HRB		RNG TER WLD WRA
	SNP TBR TRL WLD WRA	8579	- ROBIN AN C OLG TBR WLD WRA
10125	- DAN GLAHN ALT CLC HRB OLG REC RNG	2999	- CONNIE GOLDSMITH ALT CLC GEN HRE OLG
	TBR WLD WRA		REC RNG TBR WLD WRA

6774	- MARRYL GOLDSMITH: ALT CLC HRB OLG REC RNG TBR WLD WRA	10492	* NORICE & LON GOUSCHALK ALT CLC TBR WRA
2760	- SCOTT GOLDSTEIN CLC	1309	- PATRICIA B GOUDIE ALT CLC ECN HRB OLG REC TBR VIS WLD
6743	- VIRGINIA GOLDSTEIN ALT CLC HRB OLG TBR WLD WRA	3500	- AR GOULD CLC TBR
7501	- DAVID GOLDSTINE ALT CLC HRB OLG REC RNG TBR WLD WRA	2234	- JOHNGOULD CLC
6738	- NORMAN N GOLDSTINE ALT CLC ECN HRB OLG TBR WLD WRA	3504	* TERRY J GOULD CLC FSH HRB TBR VIS
10234	- P GOLDWYI LT C C TBI WRA	10375	- JAMES GOULD, JR CLC HRB TBR
10526	- E LLWITZER LC C E N I F 3 TBF	6882	* TRINI GOUTENEGRE ALT CLC HRB OLG REC RNG TBR WLD WRA
3274	- E S GOLOSMAN ALT CLC HRB OLG TBR WLD WRA	4802	- GREATER NORTH LAKE TAHOE CHAMBER COMMERCE BEVERLY BEDARD CLC ECN REC TBR
3836	- B S GOLOSMAN ALT CLC HRB OLG TBR WLD WRA	6214	- MARTA GRABIEN ALT CLC HRB OLG REC RNG TBR WLD WRA
4644	- BS. GOLOSMAN. ALT CLC HRB OLG TBR WLD WRA	5550	- MICHEL GRACE ALT CLC HRB OLG REC RNG TBR WLD WRA
1530	- JETTA GOMES CLC HRB TBR WRA	1444	- TONY GRACOENE CLC HRB RDS TBR
2067	- RONGOMES GEN	3434	- STEVE GRADHANDT CLC HRB TBR
4773	- ETHEL GOMEZ CLC OLG TBR WRA	10399	- LYNNE R. GRAEBER CLC TBR
8327	- MARIEL GOMEZ ALT CLC HRB OLG REC RNG TBR WLD WRA	503	- MARIA GRAESSER' CLC
6506	- LINDA M. GONEUM ALT CLC HRB OLG REC RNG TBR WLD WRA	3406	- CHRIS GRAFF. CLC ECN FAC HRB MIN PLN RNG TBR VIS
3223	- ANNA GONZALES CLC HRB OLG TBR WRA	4719	- CHRIS GRAFF CLC
4389	- LARRY GONZALES CLC ECN REC TBR	2609	- GREG GRAHAM ECN TBR
7728	- DONALD GONZALEZ ALT CLC HRB OLG REC RNG TBR WLD WRA	2389	- JAMES GRAHAM CLC TBR
10164	- FERNANDO GONZALEZ CLC TBR	12095	- JEAN GRAHAM CLC ECN TBR
10919	- JUAN GONZALEZ. ECN	6805	- JEAN G. GRAHAM CLC ECN TBR
187	- RON GOOD CLC HRB OLG RDS TBR WRA	1694	- JOHN M GRAHAM ALT ECN TBR
2479	- RON P GOOD H2O RDS TBR TRL WLD	7763	- MARY BETH GRAHAM' ALT CLC HRB OLG TBR VIS WLD WRA
11230	- GOOD SHEPHERD FOUNDATION TANJA KEOGH. GEN RDS RNG TRL WLD	4048	- THOMAS GRAHAM CLC HRB RNG TBR
6054	- KATHEY GOODMAN ALT CLC HRB OLG REC RNG TBR WLD WRA	5778	- MIKAIL GRAHASAY ALT CLC HRB OLG REC RNG TBR WLD WRA
4363	- LYNN GOODMAN. ALT CLC HRB OLG RDS REC TBR	441	- B G & G H GRAICHEN. CLC WLD
3322	- MARY GOODMAN. ALT CLC HRB LND RDS REC TBR	4683	- CHRIS GRÄILLAT ALT CLC TBR WRA
2391	- MARGA A GOODRIDGE ALT CLC ECN H2O HRB OLG RDS REC RNG TBR TRL WLD WRA	9147	- LOREN GRAMUCH. CLC OLG WRA
4449	- JEAUETTE GOODSPEED CLC	8471	- GEORGE J GRAMMENS REC VIS WRA
55	- R L GOODSPEED ALT CLC HRB RNG TBR	8104	- STEPHEN L GRANBOLM. CLC HRB REC RNA RNG TBR WIN WLD WRA
5687	- MAURION GOODWIN ALT CLC HRB OLG REC RNG TBR WLD WRA	5558	- JIM GRANCERLES ALT CLC HRB OLG REC RNG TBR WLD WRA
3500	- K M GOODWRIGHT CLC TBR	4915	- JOE GRANDONA. ALT CLC ECN OLG RNG TBR VIS WRA
6572	- DIANE D GOULD. ECN TBR	8165	- GRANT GRANT ALT CLC HRB OLG REC RNG TBR WLD WRA
10582	- DUANNE GOOSEN CLC TBR	10281	- GRANT L GRANT ALT CLC TBR VIS WRA
1957	- ANGIE GORDON. REC WLD	8127	- JANET S GRANT CLC OLG REC TBR TRL
9555	- C GORDON CLC H2O HRB REC TBR VIS	9495	- R GRAM ALT CLC TBR WRA
2767	- COLIN GORDON CLC	3205	- JUDITH GRANTHAM CLC OLG TBR WRA
797	- WILLIAM GORE ECN OWL	7966	- FLO GRASSENBAILER' ACT CLC TBR WRA
2762	- EFRAT GOREN. CLC	20008	- MARIE GRASSIDONIO TBR
8554	- MICHAEL GORNIK CLC GEN OLG TBR WRA	3488	- JOHN GRATE. ALT CLC HRB OLG REC TBR WLD WRA
1090	- NICKI, JON, LEONRD, SAM GORSKY CLC TBR TRL	10811	- ROLAND GRAUAS CLC OLG TBR WRA
10690	- ALAN G GOSINK. ALT CLC ECN OLG REC RNG TBR VIS WRA	11509	- DEBBY GRAVES CLC DRT HRB
5732	- NATHANIEL GOSINK CLC TBR	3522	- G GRAVES ALT CLC HRB OLG TBR WLD WRA
1788	- BILL GOSS. TBR	1356	- RICHARD W GRAVES CLC TBR
10654	- KIM GOSSAR ALT CLC ECN OLG RNG TBR VIS WRA	4589	- SCOUGRAVES CLC
9661	- SYLVIA GOSTISSA ALT CLC HRB OLG REC RNG TBR WLD WRA	1806	- MARY GRAVIU CLC TBR
3796	- KEN GOTT ALT CLC REC WLD	12110	- BEN GRAVITZ CLC
7822	- WAYNE GOTTLER ALT CLC TBR WRA	9706	- BETTY B GRAY ALT CLC ECN OLG RNG TBR VIS WRA
10493	- LONNIE, NORIELLE & JOSH GOUSCHALK ALT CLC TBR WRA	3603	- DAN P GRAY GEN TBR
		1514	- DAVID W GRAY TBR
		293	- DEBRAGRAY CLC
		753	- DELBERT L GRAY ECN TBR

3604	- EDITH M. GRAY GEN TBR	6746	- CLAIRE BERNICE GREENSFELDER' ALT CLC TRL WRA
3500	- JENNE GRAY CLC TBR	840	- JEAN GREENSFELDER CLC TBR
5726	- RONNIE & LEE GRAY REC	1524	- LIESE GREENSFELDER' ALT CLC HRB OLG TBR
3406	- WARREN GRAY CLC ECN FAC HRB MIN PLN RNG TBR VIS	10892	- LOUIS GREENSFELDER CLC HRB TBR
4709	- WARREN GRAY CLC TBR	9911	- ROBERT GREENSFELDER TBR
9489	- BETSY GRAY-GRANT ALT CLC TBR WRA	8961	- SARA GREENSFELDER CLC DRT ECN FLE H2O HRB OLG RDS REC RNG TBR TRL WRA
327	- CHARLES K. GRAYDON TRL	9035	- SARA GREENSFELDER ALT CLC HRB OLG REC RNG TBR WLD WRA
3145	- SEAN GRAYSON CLC FLE TBR WLD	3978	- JOANNE GREENWALD HRB TBR
8221	- GARY E GRAZ ECN HRB	6916	- TRACY A GREENWALD ALT CLC TBR WRA
1461	- GREAT WESTERN CHEMICAL KAY SMITH ECN TBR	9198	- ANNE GREENWALT ALT CLC ECN OLG RNG TBR VIS WRA
3430	- A CRAWFORDGREEN REC	9855	- MARVIN C GREENWALT ALT CLC ECN OLG REC RNG TBR VIS WRA
1832	- BETTY & SHERMAN GREEN ECN GEN OWL	4132	- TRAC N GREENWOOD ALT CLC ECN OLG RNG TBR VIS WRA
3555	- BRAD A GREEN ALT RDS REC TRL WRA	9191	- MARION GRENER ALT CLC ECN OLG RNG TBR VIS WRA
1309	- CAROLE GREEN ALT CLC ECN HRB OLG REC TBR VIS WLD	8066	- LESLIE GREFENSON ALT CLC TBR WRA
2396	- CHARLES E HANNE GREEN CLC TBR	10563	- KATHLEEN GREGG CLC GEN HRB TBR
5306	- CHARMAINE IN ALT CLC HRB OLG REC TBR WLD WRA	5388	- L PERRY GREGG, III ALT CLC HRB OLG REC RNG TBR WLD WRA
8036	- CHARMAINE GREEN ALT CLC ECN OLG RNG TBR VIS WRA	9374	- EDWING H GREGG, JR CLC REC VIS
10534	- CHARMAINE GREEN CLC GEN HRB TBR	5366	- BECKY GREGORY ALT CLC ECN OLG RNG TBR VIS WRA
554	- JAMES GREEN ALT CLC GEN HRB REC RNG TBR WLD WRA	5368	- CHERYL GREGORY ALT CLC ECN OLG RNG TBR VIS WRA
9856	- JOHN GREEN ALT CLC HRB OLG REC RNG TBR WRA	10551	- CHRIS GREGORY CLC GEN HRB TBR
5693	- JOHN GREEN ALT CLC HRB OLG REC RNG TBR WRA	3601	- CHRISTINE L GREGORY' ECN TBR
6402	- KARL O GREEN. ALT CLC ECN OLG RNG TBR VIS WRA	3077	- ELOISE C GREGORY, CLC ECN TBR
106	- L GREEN. CLC HRB	11253	- KEITH GREGORY ECN RDS
7632	- MAI C GREEN. ALT CLC TBR WRA	3602	- KEITH L GREGORY ALT ECN WRA
7744	- MAI GREEN ALT CLC HRB OLG REC RNG TBR WLD WRA	563	- KEVIN J GREGORY ECN
1700	- MICHAEL GREEN. CLC ECN HRB OLG TBR WRA	3615	- MARGARET GREGORY, ALT TBR
4209	- MICHAEL GREEN CLC HRB	3023	- SYLVIA M GREGORY' ALT CLC HRB RNG TBR WLD
7886	- MICHAEL GREEN' ALT CLC HRB OLG REC RNG TBR WLD WRA	3940	- SYLVIA M GREGORY CLC HRB OLG RNG TBR
9046	- MICHAEL GREEN ALT CLC HRB OLG REC RNG TBR WLD WRA	2831	- TOM GREGORY' ALT H2O TBR WLD
9968	- MICHELLE GREEN. CLC ECN HRB TBR	3045	- TOM GREGORY. ALT CLC HRB OLG TBR WLD WRA
8919	- MRS RAYMOND GREEN ALT CLC HRB OLG REC RNG TBR WLD WRA	11068	- TOM GREGORY. GEN RDS TBR TRL
4832	- ROBERT GREEN ALT CLC ECN OLG RNG TBR VIS WRA	10672	- GREGORY, PA ALT CLC HRB OLG REC RNG TBR WLD WRA
10339	- SHANNON G ALT CLC ECN OLG RNG TBR VIS WRA	4410	- KAREN GREGRY ALT CLC HRB OLG TBR VIS WLD WRA
3034	- SUZANNE GREEN. CLC	288	- BETTE GREIF CLC HRB RNG TBR WRA
3925	- T GREEN CLC TBR	8998	- MICHAEL GRENIER CLC
2926	- TIM GREEN CLC TBR	11914	- MICHAEL GRENIER
7887	- WAYNE GREEN ALT CLC HRB OLG REC RNG TBR WLD WRA	8634	- JON GRESLEY REC WRA
1831	- WILLIAM GREEN GEN TBR	948	- NANCY GRESSINGER TBR
10933	- JACK GREEN ALT WRA	2433	- KEN GRESSMAN CLC
8170	- HARRY W GREEN, II ALT CLC HRB TBR	6895	- KEN GRESSUN ALT CLC HRB OLG REC RNG TBR WLD WRA
8137	- LORI ANN GREENBERG GEN H2O HRB OLG RDS REC RNG TBR TRL WIN WLD	7581	- JANET GRESTER ALT CLC ECN OLG RNG TBR VIS WRA
9991	- C A GREENE ALT CLC TBR WRA	8412	- GLORIA GREVALO AIR CLC ECN FLE H2O HRB OLG RNG TBR TRL VIS WLD
7885	- ANNE GREENFELDER ALT CLC H2O HRB OLG REC RNG TBR WLD WRA	8642	- DENNIS GREWER CLC
9144	- ROBERT D GREENFELDER CLC TBR	7336	- SYLVAN GREY ALT CLC TBR WRA
3654	- ANNA GREENLEAF ALT CLC ECN HRB OLG RNG TBR VIS WRA	9563	- OREN & CATHERINE GRIDER CLC H2O HRB REC TBR VIS
28	- ANNE GREENSFELDER CLC TBR	2466	- LUCY GRIENE ALT ECN GEN
8434	- ANNE GREENSFELDER ALT CLC HRB OLG TBR WLD WRA	7332	- JAMES GRIERBY ALT CLC HRB OLG TBR WLD WRA

9497	- JOHN A GRIESBACH. ALT CLC TBR WRA	8297	- ELAND GROVE. CLC GEN OLG TBR WRA
2895	- DEBORAH GRIEST CLC ECN RDS TBR	8638	- PHYLLIS GRUBBS CLC ECN TBR
6468	- CINDY R GRIFFIN ALT CLC ECN OLG RNG TBR VIS WRA	915	- MICHAEL GRUNDY FSH GEN TRL WLD
6116	- DAVID GRIFFIN. ALT CLC TBR WRA	6855	- C GRUSCKER' ALT CLC H20 REC TBR WLD
3500	- JUDY GRIFFIN CLC TBR	1309	- MONTE GUADAGNOLO ALT CLC ECN HRB OLG REC TBR VIS WLD
11194	- LINDA & EDWARD GRIFFIN ALT CLC GEN HRB OLG TBR WLD WRA	10969	- CRISTI GUADAGRINI' ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA
2489	- MICHAEL GRIFFIN CLC ECN HRB RDS REC TBR	6266	- NANCY GUARNERB ALT CLC ECN TBR WRA
6875	- RUTHELLEN GRIFFIN, ALT CLC FSH GEN TBR WLD WRA	8609	- BOB GUBBER CLC ECN HRB REC TBR VIS WLD WRA
6631	- VIRGINIA S GRIFFING. ALT CLC HRB RDS TBR TRL WRA	9067	- JAYA GUBELMAN. ALT CLC TBR WRA
5615	- ARIA GRIFFIS ALT CLC HRB OLG REC RNG TBR WLD WRA	3307	- KRISTI GUEMMER TBR WLD
6979	- DAVID GRIFFIS. ALT CLC ECN GEN OLG RNG TBR VIS WRA	867	- AMY GUENARD. CLC GEN HRB OLG RDS REC TBR
6141	- MICHAEL GRIFFIS. ALT CLC TBR WRA	10224	- DOUGLAS A. GUENTHER ALT CLC TBR WRA
6242	- JEANNE GRIFFITH ALT CLC HRB OLG REC RNG TBR WLD WRA	10410	- LYNNE GUENTHER ALT CLC REC TBR WRA
494	- LEE GRIFFITH WIN	9534	- REBECCA GUENWALD CLC ECN
3879	- MARTIN GRIFFITH ALT CLC GEN LND RNG TBR WRA	6547	- MARTIN GUERREA ALT CLC HRB OLG REC RNG TBR WLD WRA
4860	- MATT GRIFFITH. ALT CLC HRB OLG REC RNG TBR WLD WRA	8033	- DAVID L. GUERRERO ALT CLC ECN OLG RNG TBR VIS WRA
4425	- JOE GRIGGS CLC GEN TBR	10891	- WENDY GUETEBIER CLC TBR
2300	- JOE GRIGGS, JR . CLC GEN TBR WLD WRA	9217	- GARY T GUGGUBS. CLC TBR
11236	- JOE GRIGGS, JR • CLC TBR WRA	7596	- PAULA GUGLIOTTA ALT CLC ECN OLG RNG TBR VIS WRA
4894	- TRACI GRIGSBY ALT CLC HRB OLG REC RNG TBR WLD WRA	10689	- ROY GUGLIOTTA ALT CLC ECN OLG RNG TBR VIS WRA
8528	- MURIEL GRINOLD, ALT CLC ECN OLG REC RNG TBR VIS WRA	11775	- PAM GUIDERA CLC GEN HRB TRL WRA
4220	- GEORGE GRIST ALT CLC ECN HRB RNG	5457	- BARBARA GUIDRY ALT CLC ECN OLG RNG TBR VIS WRA
3099	- MR & MRS GRIVETTA ALT ECN GEN	3401	- ANNETT L GUION CLC
9227	- MIKE GROAT. ALT CLC ECN OLG RNG TBR VIS WRA	2676	- LUTHER H GULICK ALT CLC HRB OLG TBR VIS WLD WRA
10417	- NARISSA GROB OLG TBR	10497	- SAM GULISANO ALT CLC TBR WRA
10418	- VICKI GROB. CLC	8586	- ADAM GULLEN' ALT CLC
5890	- VIKI GROB ALT CLC HRB OLG REC RNG TBR WLD WRA	10205	- JOHN GULLOCK ALT CLC TBR WRA
8800	- ROGER GROGHAN ALT CLC HRB OLG TBR WLD WRA	7573	- ETHLEEN GUMMAR ALT CLC ECN OLG RNG TBR VIS WRA
9312	- JOHN GROGSRUD. CLC LND TBR WIN WRA	3164	- MICHAELA GUNBY ALT CLC HRB OLG TBR WLD WRA
7614	- ROGER GROH. ALT CLC TBR WRA	1630	- MARY GUNDERSON' CLC HRB
9381	- BARBARA K. GROLES ALT CLC TBR WRA	640	- J F. GUNION CLC ECN RDS REC TBR WRA
4819	- TERRI GRONDONA. ALT CLC ECN OLG RNG TBR VIS WRA	7247	- CYNTHIA GUNNE ALT CLC ECN OLG RNG TBR VIS WRA
6845	- DONALD & DELORES GRONOS ALT CLC HRB OLG TBR WLD WRA	253	- FREDERIC R GUNSKY CLC RDS REC TBR TRL VIS WRA
6850	- WILSON GRONOT CLC HRB RDS TBR	1309	- CHERI GUMER. ALT CLC ECN HRB OLG REC TBR VIS WLD
5596	- DEBORAH GROSS ALT CLC HRB OLG REC RNG TBR WLD WRA	9306	- A B GUNTHER. CLC H20 HRB REC TBR VIS
1763	- E RAY GROSS ECN WLD WRA	5680	- KAIN W GURNEY ALT CLC HRB OLG REC RNG TBR WLD WRA
11574	- E RAY GROSS ALT CLC ECN OLG RNG TBR VIS WLD WRA	10753	- ELAINE GUSTAFSON' CLC H20 HRB REC TBR VIS
6799	- JUDY GROSS ALT CLC HRB OLG REC RNG TBR WLD WRA	7027	- LESLIE GARDNER GUSTAFSON ALT CLC TBR WRA
8571	- MARYA GROSS CLC ECN HRB TBR TRL VIS WRA	3837	- RICHARD GUSTAFSON ALT CLC TBR WRA
661	- MICHAEL R GROSS GEN	4216	- CATHERINE GUTHRIE ALT CLC HRB OLG TBR WLD WRA
4649	- PHILLIP GROSS ALT CLC TBR WRA	9221	- MEGNON W GUTHRIE CLC
5458	- RONALD GROSS. ALT CLC ECN OLG RNG TBR VIS WRA	414	- ROBIN GUTHRIE CLC HRB
1440	- LOUIS GROSSMAN: CLC TBR TRL	1926	- VERNA GUTHRIE ALT ECN GEN
8963	- ROBERT GROTKE ALT CLC HRB OLG REC RNG TBR WLD WRA	7961	- DAOM GUTIERREZ ALT CLC TBR WRA
7707	- BONNIE GROUNAS ALT CLC ECN OLG RNG TBR VIS WRA	10721	- BRUCE R GUTLON ALT CLC TBR WRA
		79	- A R GUTOWSKY ALT CLC ECN GEN H20 HRB LND OLG OWL RDS REC RNA RNG TBR TRL VIS WIN WRA

9602	- ALLAN GUTTMAN ALT CLC TBR WRA	11125	- CLARENCE HAGMEI CLC
9601	- ILEEN GUTTMAN ALT CLC TBR WRA	950	- GARY HAGUE ECN TBR
3500	- D G GUY CLCTBR	6953	- BARBARA HAHN CLC TER
2702	- GABRIEL GUY CLC TBR	5314	- KIRSTIN HAIDEN ALT CLC HRE OLG REC RNG TBR WLD WRA
355	- HATTIE G W CLC ECN HRB OLO RNG TBR WLD WRA	6347	- DAVID H HAIGHT C FLE GEN HRB OLG TBR TRL WRA
1531	- HATTIE G W ECN RNG	6430	- PAUL HAILRIB ALT CLC HRB OLG REC RNG TBR WLD WRA
356	- ROSS G GUY CLC HRB RNG TBR WRA	4251	- GANEE HAINFORD TBR
10160	- MICOLE GUYAINO CLC REC TBR	9287	- WILLIAM L HAIRE CLC LND REC TER
6441	- BETTY GWER ALT CLC ECN OLG RNG TBR VIS WRA	1085	- CAROL HAKE REC WIN WRA
8264	- EVER GUZMAN ALT CLC ECN OLG REC RNG TBR VIS WRA	4085	- DEXTER H HAKE REC
7257	- KATE GUZMAN ALT CLC TBR WRA	1870	- DON R HALDANE CLC
8262	- ROSA E GUZMAN ALT CLC ECN OLG REC RNG TBR VIS WRA	6212	- CHARLIE HALE ALT CLC ECN OLG RNG TER VIS WRA
4140	- SHERRY GUZZI CLC ECN GEN HRB RDS TER	954	- GERALDINE HALE ALT
4141	- TED GUZZI CLC ECN GEN HRE OLG	8276	- MARK D HALE ALT CLC ECN OLG RNG TBR VIS WRA
589	- GV SPORTSMEN'S CLUB HOMER BIGGS' LND	7820	- BRAD HALES ALT CLC TER WRA
8821	- NANCY C GWYNA ALT CLC H20 RDS REC TBR WLD	3259	- CLAIRE HALEY ALT CLC HRB OLG REC RNG TBR WLD WRA
2650	- JOHN A GWYNN CLC ECN HRE RNG TBR WLD	2669	- JILL HALEY ALT CLC HRB OLG TBR
4171	- RICHARD GYWULKA ALT CLC GEN HRB RDS TBR TRL	8540	- JILL HALEY ALT CLC ECN HRB OLG RNG TBR VIS WRA
10786	- MARIET H ALT CLC ECN OLG RNG TBR VIS WLD WRA	572	- PAUL D HALIB ALT CLC ECN FLE HRB RDS TBR VIS
4751	- TAMI HAACK CLC TBR	7304	- BRIAN F HALL ALT CLC HRB OLG REC RNG TER WLD WRA
9352	- JIM HAAS ALT CLC HRB OLG REC RNG TBR WLD WRA	3762	- DIANE HALL ALT CLC HRB OLG TER WLD WRA
5316	- AIMEE HAAZ ALT CLC HRE OLG REC RNG TBR WLD WRA	5211	- DOROTHY HALL ALT CLC HRB OLG REC RNG TBR WLD WRA
6654	- LORI HAEWEB ALT CLC ECN OLG RNO TBR VIS WRA	1785	- KARENHALL CLC
7695	- ANNE HABERTERN ALT CLC ECN HRB TBR VIS WLD WRA	6202	- KATHRYN HALL ALT CLC ECN OLG RNG TER VIS WRA
7427	- PAUL D HABIB ALT CLC HRB OLG REC RNG TER WLD WRA	8355	- KENNA HALL CLC H20 HRB REC TBR VIS
221	- BRUCE HACKBART CLC ECN HRB TBR	5453	- MARGOT HALL ALT CLC ECN OLG RNG TBR VIS WRA
691	- BEVERLY HACKETT REC TER	9516	- MARJORIE HALL ALT CLC ECN GEN OLG RNG TBR VIS WRA
7253	- TIMOTHY HACKETT ALT CLC TBR WRA	10590	- PAULA HALL ALT CLC HRB OLG TER WLD WRA
2917	- PHILIP G HADDOCK RPF CLC FLE H20 REC RNG TBR TRL WLD	9873	- PAULA L HALL ALT CLC HRB OLG TER WLD WRA
8615	- SUSAN K HADDON CLC ECN HRE RDS TBR	9504	- SCOTT P HALL ECN GEN HRE LND RDS RNG TER TRL WLD WRA
9542	- ERIC HADDOX CLC HRE	8194	- STUART M HALL ALT CLC TBR WRA
4001	- LLOYD HADDY CLC TBR	11120	- SYD HALL HRE TBR
4426	- CHRISTOPHER HADEL ECN GEN TER	2919	- LUCIENDA, DEBRA HALL AND STEVE WILCOX. CLC DRT TBR
11022	- SUSAN HADOD ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA	6125	- JESS HALLAR ALT CLC TBR WRA
8892	- BROTHER CHARLES HADRIK ALT CLC HRB OLG RDS TBR WLD WRA	6124	- TERRI HALLAR ALT CLC TBR WRA
5766	- BARBARA HAFF ALT CLC ECN OLG RNG TBR VIS WRA	6788	- JAMI HALLER ALT CLC HRB OLG REC RNG TBR WLD WRA
2225	- ELLEN HAGAN CLCTER	568	- JESSE L HALLFORD ECN TBR
3364	- LORI HAGAR CLC OLG TER WRA	11222	- CHRIS HALLMAN ECN H20 OLG TBR WLD
8128	- MERILYN HAGASLAN CLC HRB	6956	- E HALLOWAY ALT CLC HRB OLG REC RNG TBR WLD WRA
7320	- MARYANA HAGGERTY ALT CLC TBR WRA	1956	- MIKE HALMER ECN REC
11948	- PATRICIA HAGGERTY ALT ECN GEN TBR	1978	- DARLA HALPER CLC HRB WLD
2334	- PATRICIA K HAGGERTY ALT CLC ECN HRB OLG TER WLD WRA	9973	- VIKKI HALPIN CLC GEN HRB TBR
3500	- MIKE HAGLEY JR CLC TBR	2752	- HOLLY HALSE ECN TBR
1717	- CLARENCE HAGMEIER CLC ECN HRB TBR VIS WRA	8514	- EDWARD HALSELL CLC OLG TBR WRA
6080	- CLARENCE HAGMEIER CLC ECN FLE FSH H20 HRB RNG TBR WLD	4234	- ELLEN HALSTED ALT CLC HRE OLG REC RNG TBR WLD WRA

5518	- ELLEN HALSTED ALT CLC TBR WRA	8170	- MARK HAMPTON ALT CLC HRB OLG REC
2372	- ROBERTO HALTON, TBR		RNG TBR WLD WRA
10233	- JULI HALVERSON, ALT CLC TBR WRA	3091	MR & MRS C D HAMPTON ALT ECN GEN
8160	- MATT HAM ALT CLC HRB OLG REC RNG TBR	2764	JEREMY HAMRAS CLC
	WLD WRA	3087	- MILDRED HAMRICH, ALT ECN GEN
6172	- NATHER S HAM ALT CLC HRB OLG REC	3088	DALLAS HAMRICK ALT ECN GEN
	RNG TBR WLD WRA	5874	- EDNA HAN HOUDE ALT CLC HRB OLG REC
1215	- GUS H HAMANN ALT CLC HRB RNG TBR		RNG TBR WLD WRA
	WRA	4163	- HELEN HAND CLC TBR
41	- DORIS J HAMAR, CLC H2O REC	989	- CAROL R HANDELMAN CLC
2693	- B COLIN HAMBUN CLC OLG WRA	350	- BRUCE A HANDLEY CLC ECN HRB RDS
3754	- MRS HAMBUN, ALT CLC ECN OLG RNG TBR	8557	RACHEL HANES CLC OLG TBR VIS WRA
	VIS WRA	9733	ROCKY HANES ALT CLC ECN OLG RNG TBR
8269	- CHERYL A HAMDAN ALT CLC ECN HRB OLG		VIS WRA
	REC RNG TBR VIS WRA	8611	RONALD HANES CLC HRB TBR
8263	- CARLOS A HAMDRA, ALT CLC ECN OLG REC	1673	MARVIN HANEY, LND OLG RDS TBR WRA
	RNG TBR VIS WRA	9417	ASHLEY HANKS ALT CLC ECN OLG RNG TBR
6213	- JOHN HAMELE ALT CLC ECN OLG RNG TBR		VIS WRA
	VIS WRA	7252	KATHLEEN HANNA ALT CLC TBR WRA
3195	- JEREMIAH HAMER CLC TBR	10489	BILL HANNAFORD ALT CLC TBR WRA
2049	- RUSSELL P HAMERLY RDS REC TBR WLD	3138	- GAYNEE HANNAFORD CLC
	WRA	10134	- RICHARD HANNAH ALT CLC ECN OLG RNG
8524	- HAMILTON ALT CLC ECN OLG RNG TBR VIS		TBR VIS WRA
	WLD WRA	8229	- CHARLOTTE HANNAN CLC
1131	- ALAN HAMILTON ECN REC RNG	8116	JEROME HANNAN CLC
9338	- CAREN LYNNE HAMILTON, CLC ECN HRB	8204	JOHN C HANNAN CLC
	OLG REC TBR WRA	207	ROBERT A DORIS HANNAN CLC HRB RNG
10620	- DWIGHT HAMILTON CLC H2O HRB REC TBR		TBR WRA
	VIS	328	KATHY P HANNEMANN, CLC ECN HRB
2731	- ELIZABETH HAMILTON, CLC REC TBR VIS	1680	ANN HANSEN ALT CLC DRT ECN HRB LND
3645	- FRANCIS X HAMILTON CLC ECN HRB TBR		RDS TBR VIS WRA
7087	- GARY HAMILTON, ALT CLC ECN OLG REC	2316	ANN A TOBY HANSEN ALT OLG TBR
	RNG TBR VIS WRA	2397	- ANN A TOBY HANSEN, REC WIN WLD
4485	GINNY HAMILTON CLC HRB	8452	BRENT HANSEN, ALT CLC HRB OLG REC
10621	ENNIFER R HAMILTON CLC H2O HRB REC		RNG TBR WLD WRA
	TBR VIS	2237	CHRISTOPHER & KAREN HANSEN CLC ECN
9490	JIM HAMILTON ALT CLC TBR WRA		GEN HRB TBR VIS
3809	REED HAMILTON CLC RNG TBR WLD WRA	4167	DOROTHY HANSEN, CLC TBR
5855	SCOTT HAMILTON, ALT CLC HRB OLG REC	865	JOHN A HANSEN GEN REC
	RNG TBR WLD WRA	10776	KATHRYN HANSEN, ALT CLC HRB OLG TBR
1887	TED F HAMILTON, ALT CLC ECN FSH HRB		WLD WRA
	LND OLG RDS RNG TBR TRL WLD WRA	4471	KAY HANSEN, ALT TBR WLD WRA
7312	JULIA HAMILTS ALT CLC ECN OLG RNG TBR	569	LAURIE D HANSEN CLC ECN REC TBR
	VIS WRA	3074	- LLOYD HANSEN ECN TBR
7439	- RAY D HAMMACK ALT CLC HRB OLG REC	7802	- PETER HANSEN ALT CLC TBR WRA
	RNG TBR WLD WRA	5612	RALPH HANSEN ALT CLC HRB OLG REC RNG
6505	- DAVID HAMMAN ALT CLC ECN OLG RNG TBR		TBR WLD WRA
	VIS WRA	4258	ROBERT HANSEN CLC TBR
5166	- JUDY HAMMAN ALT CLC ECN OLG RNG TBR	1134	SUSANNE HANSEN ALT CLC HRB PLN TBR
	VIS WRA	8836	ANN HANSEN & BRENT WEAVER CLC FSH
5167	- MICHELLE HAMMAN ALT CLC ECN OLG RNG		OLG OWL RNG TBR VIS WLD
	TBR VIS WRA	4193	HANSEN BROS CONTRACT ORSEN B,
5165	- ROBERT A HAMMAN ALT CLC ECN OLG		HANSEN CLC OWL TBR
	RNG TBR VIS WRA	7445	MARK HANSEN ALT CLC HRB OLG REC RNG
3753	- ELIZABETH HAMMELT, ALT CLC HRB OLG		TBR WLD WRA
	REC RNG TBR WLD WRA	3686	JANICE HANSIA IAW CLC OLG TBR WRA
9w5	- TANEY HAMMEN, ALT CLC HRB OLG REC	3860	MARY L HANSHAW, CLC OLG TBR WRA
	RNG TBR WLD WRA	669	BIL HANSON CLC TBR
110	- ROBERT J HAMMING CLC HRB	2447	BOB HANSON GEN TBR
10632	- CHARLES F HAMMOND CLC H2O HRB REC	3050	JANICE HANSON ECN TBR
	TBR VIS	7801	LAURIE E HANSON ALT CLC TBR WRA
4203	- EVE HAMNER ALT CLC HRB OLG REC RNG	2446	- LYNN HANSON ECN
	TBR WLD WRA	2106	- N L HANSON HANSON TBR
4204	- RICHARD HAMNER ALT CLC HRB OLG REC	11214	ORSON HANSON ALT CLC GEN
	RNG TBR WLD WRA	2622	RALPH HANSON, TBR
5649	- RON HAMPEL ALT CLC ECN OLG RNG TBR	336	- ROB HANSON CLC ECN GEN
	VIS WRA		RNG TBR WLD

2443	- ROBERTC HANSON TBR	6027	- JACKSON HARRIS ALT CLC ECN OLG RNG TBR VIS WRA
10828	- SHARONHANSON CLC	2912	- JAMES HARRIS CLC TBR VIS
2197	- JEFF HANT CLC	6050	- JOANNE HARRIS ALT CLC HRB OLG REC RNG TBR WLD WRA
10579	- CHARLESHANTS ECN GEN HRE RECTBR	562	- JON HARRIS CLC ECN GEN HRB OLG RDS REC RNG TBR TRL VIS WRA
7962	- DAMIN HANY ALT CLC HRB OLG REC RNG TBR WLD WRA	6236	- LORENE HARRIS ALT CLC ECN OLG RNG TBR VIS WRA
10371	- MR & MRS HARBERT CLC	6853	- MARIE E HARRIS CLC TBR
10980	- DIANA HARBOUR ALT CLC ECN FSHH2O HRB SNP TBR TRL WLD WRA	3470	- MRS DELMAR HARRIS CLC
10597	- DAVID C HARCUS ALT CLC GEN TBR	10108	- NANCY HARRIS, ALT CLC ECN OLG RNG TBR VIS WRA
9345	- PATRICIA HARDEN CLC H2O HRB REC TBR VIS	1208	- OTIS HARRIS ECN TBR
10372	- CHARLES HARDESTY CLC ECN TER	6421	- PAT HARRIS ALT CLC ECN GEN OLG RNG TBR VIS WRA
1798	- SHIRLEY & HALE HARDESTY CLC HRB OLG OWL TBR TRL WLD WRA	6796	- RICK HARRIS ALT CLC HRB OLG REC RNG TBR WLD WRA
2704	- DIANE K HARDIN ALT CLC ECN OLG RNG TBR WRA	9081	- RICK HARRIS ALT CLC HRB OLG TBR WLD WRA
6582	- JOHN W HARDIN CLC	5043	- ROSE HARRIS ALT CLC ECN OLG RNG TBR VIS WRA
843	- KEN & DIANNE HARDIN GEN	3352	- SARA HARRIS CLC TBR WRA
2705	- KENNETH HARDIN ALT CLC ECN OLG RNG TBR WRA	7630	- TOM HARRIS ALT CLC TBR WRA
2125	- LOIS C HARDIN CLC ECN HRB OLG REC RNG TER VIS WRA	5723	- VIRGINIA J HARRIS CLC OLG TBR TRL WRA
2908	- PAUL HARDIN CLC ECN GEN OLG REC RNG TBR VIS WRA	6561	- JOHN H HARRIS, PHD CLC ECN OWL RNA RNG SIA SNP TBR WLD WRA
11	- G L HARDING CLC ECN HRB TBR	1197	- DAVID HARRISON CLC TBR
6853	- DOROTHY B HARDY CLC TBR	8669	- DAVID HARRISON CLC TBR
6946	- SCOTT HARDY ALT CLC HRB OLG REC RNG TBR WLD WRA	4116	- JEFFERY HARRISON' RDS TER WRA
3423	- BOB HARE CLC HRB TBR	10254	- JENNIFER HARRISON, ALT CLCTBR WRA
5698	- KATHLEENHARENEZ ALT CLC HRB OLG REC RNG TER WLD WRA	10257	- MARGARET HARRISON ALT CLC REC TBR WRA
6884	- TERI HARGROVE CLC OLG TBR WRA	2497	- SUSAN HARRISON CLC H2O OLG TBR VIS WRA
10345	- DIANNA HARISO GEN	2319	- ALBERTA S HART CLC HRB OLG
6516	- JAN HARITALE ALT CLC FSH HRB LND OLG REC RNG TBR WLD WRA	4022	- CATLIN HART, ALT CLC HRB OLG REC RNG TBR WLD WRA
2006	- DARCI E HARLARD ALT ECN GEN	2625	- LEE SHERMAN HART ALT CLC HRB OLG TBR WLD WRA
559	- JULIE HARLOW CLC ECN	8400	- MARY HART CLCTBR
828	- SUSAN HEALY HARMAN ALT CLC HRB OLG REC VIS WLD WRA	4226	- MEGAN HART ALT CLC HRB OLG REC RNG TBR WLD WRA
4783	- BRENT HARMER CLC OLG TBR WRA	11974	- ELAINE HARTE CLC DRT H2O RNG VIS
5809	- KRISTA HARMON ALT CLC ECN OLG RNG TBR VIS WRA	6853	- MADILENE HARTFIELD CLC TBR
4989	- LEONHARMS CLC	1686	- BRUCE C HARTFORD CLC TBR
7511	- MIDGE FABERT HARN ALT CLC HRB OLG REC RNG TBR WLD WRA	2403	- HAROLD HARTIN ECN GEN TBR
6853	- GLORIA HARNEY CLC TBR	5209	- DANNI HARTLEY, ALT CLC HRB OLG REC RNG TBR WLD WRA
3282	- DAVID HAROLD CLC	8402	- BETTY M HARTMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
10143	- TERESA HARP, ALT CLC ECN OLG RNG TBR VIS WRA	10668	- MATTHEW HARTMAN ALT CLC ECN OLG RNG TBR VIS WRA
4563	- LAWANDA HARPER ALT CLC HRB OLG TBR WLD WRA	11799	- MRS H. HARTMAN' ALT
5918	- MILLER HARPER ALT CLC ECN OLG RNG TBR VIS WRA	6833	- ELAINE T HARTO CLC H2O REC RNG TBR VIS
9421	- TUMA HARPER ALT CLC ECN OLG RNG TBR VIS WRA	7066	- PAUL HARTSOUGH ALT CLC ECN OLG REC RNG TBR VIS WRA
6716	- W EDWARD HARPER CLC ECN HRB TBR	162	- ALISON HARVEY TBR
11431	- WAYNE HARPER CLC ECN HRB TBR	648	- DENNIS HARVEY TBR
5963	- GARY HARR ALT CLC ECN OLG RNG TBR VIS WRA	6853	- JOANNE HARVEY CLC TBR
10343	- FRANK HARRINGTON TBR	5459	- MARTIN HARVEY ALT CLC ECN OLG RNG TBR VIS WRA
10742	- KAREN M HARRINGTON ALT CLC TBR WRA	11526	- WALTER M HARVEY CLC HRB
10768	- PAM HARRINGTON CLC OLG TBR WLD WRA	3526	- HELEN HARWOOD CLC
10158	- DARRYL HARRIS CLC	1203	- GARY HASCALL ALT CLC HRB RNG TBR VIS WRA
7778	- DEERE CHIRCO HARRIS CLC H2O HRB REC TER VIS		
3655	- GENE HARRIS ALT CLC HRB OLG TER WLD WRA		

6851	KATHLEEN HASCALL; TBR	7285	• CYNTHIA R HAYES ALT CLC TER WRA
7544	CLAY HASH CLC GEN HRE TBR	7286	• DANIEL N HAYES ALT CLC TER WRA
6732	GERLENE HASH ALT CLC HRB RDS TRL	4473	• JACI HAYES CLC
6933	MICHAEL N. HASH ALT CLC TER WRA	4594	• RON HAYES CLC
6632	ROBERT J. HASH. CLC TRL	7105	RONALD HAYES ALT CLC ECN H20 OLG RNG TER VIS WRA
7173	WILMA HASH ALT CLC TBR WRA	4469	• THOMAS HAYES CLC HRB TBR
10953	MICHAEL K. HASKINS ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA	9586	• VERLENE HAYES CLC TER
970	ATRICIA A. HASE EB C, DDS IEC TRL	3150	• SHERRY HAYES CLC HRB
1121	RICIA HASE EB C, DDS LT FSH RNA RNG /LD V	3150	• STEPHEN HAYES CLC HRB
5636	MELISSA HASSON. ALT CLC HRE OLG REC RNG TER WLD WRA	3150	• VINCE HAYES CLCHRE
3763	• DENNIS HASTEN ALT CLC HRB OLG TBR WLD WRA	9068	• PATTY HAYFIELD ALT CLC TER WRA
2233	• FRANKHASY ECN	3744	• PRISCILLA HAYNES ALT CLC TBR
4998	• CAROL HATCH ALT CLC HRE OLG TBR WLD WRA	1472	• VICKIE HAYNIE CLC ECN HRB REC VIS
2096	• SYLVIA A HATFIELD ALT CLC HRB OLG TER WLD WRA	20500	• LAINA HAYS TRL
4557	• JENNIFER HATHORNE ALT CLC HRB WLD	10559	• LISA HAYS CLC GEN HRB TBR
11368	• JENNIFER T HATHORNE CLC HRB REC TER TRL WLD WRA	2022	• MARLENE L HAYS ALT ECN GEN
2071	• BRIAN HATOFF WRA	2726	• JULIE M HAYTON CLC HRE RDS
11185	• DONALD B HATRON. ALT CLC ECN OLG RNG TBR VIS WRA	5192	• TAMARA HAYWARD ALT CLC HRB OLG REC RNG TBR WLD WRA
4093	• RICHARD HATTON H2O REC TRL WRA	8563	• KEVIN HAZLETON CLC GEN OLG TBR WRA
12146	• ROBERT HATTON. ECN VIS	7167	• SUZI M HAZLETT; ALT CLC TBR WRA
3998	• PAUL HAU ALT CLC HRB VIS	10761	• KERRY HEABERB CLC OLG REC TBR VIS WRA
2796	• ERIN HAUGE ALT CLC OLG RNG WRA	2753	• ANNIE HEAD TBR
6756	• ERIN HAUGE ALT CLC HRB OLG REC RNG TER WLD WRA	4323	• KENNETH HEAD. CLC
9299	• MARY H HAUGHEY ALT CLC ECN OLG REC RNG TBR VIS WRA	5427	• MR & MRS FRANKHEADLEY CLC H2O HRB REC TBR VIS
10057	• COLIN HAUGHIN ALT CLC ECN OLG RNG TBR VIS WRA	5274	• BERNICE HEADRICK; ALT CLC ECN OLG RNG TBR VIS WRA
4791	• CHRISTINE HAULMAN ALT CLC HRB OLG TER WLD WRA	4787	• GARY HEADRIDE; CLC OLG TER WRA
1548	• LORINE HAULMAN CLC HRB RNG TBR WRA	3976	• ELSIE HEAGERTY REC
7988	• D. HAUSSLE. ALT CLC HRB OLG REC RNG TBR WLD WRA	4100	• LOUIS HEALING ALT CLC HRB OLG TBR TRL WLD WRA
6210	• KELLY HAUTLEY; ALT CLC ECN OLG RNG TER VIS WRA	5796	• EDWARD J HEALY ALT CLC HRE OLG REC RNG TBR WLD WRA
3150	• CHIP HAYMAN; CLC HRE	8918	• SHAWN HEALY ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
6853	• CLAUDIA E HAWES. CLC TBR	2989	• VIRGINIA HEALY ALT CLC HRB OLG TBR WLD WRA
5656	• MALEIRA HAWES ALT CLC ECN OLG RNG TER VIS WRA	11010	• ELIZABETH HEALY ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA
9549	• CHRIS HAWK. CLC HRB RDS	9325	• R HEAMY. CLC REC WIN WRA
9294	• A J HAWKER CLC ECN HRB OLG	11362	• JOHN M. HEANEY CLC TER
9865	• MRS. JASON A. HAWKER. ALT CLC HRB OLG TBR WLD WRA	6591	• ROBERT HEANN CLC ECN RNG TBR TRL WIN WRA
8306	• GREY HAWKES ALT CLC HRB OLG REC RNG TBR WLD WRA	10947	• GREG HEARD. CLC HRE RDS TER
10986	• KATHLEEN HAWKES ALT CLC ECN FSH H20 HRE SNP TER TRL WLD WRA	1575	• HEARIN FOREST IND A CRAIG DIGMAN ECN TBR
6550	• HEATHER HAWKINGS; CLC OLG TBR WRA	8292	• SEAN HEARNE ALT CLC OLG TBR WRA
1381	• DALE W HAWKINS; ECN TBR	6763	• J. ERICK HEATH ALT CLC HRB OLG REC RNG TER WLD WRA
6228	• MARTHA HAWKINS. ALT CLC HRB OLG REC RNG TBR WLD WRA	9106	• WALTER J HEATON ALT CLC ECN OLG RNG TBR VIS WRA
2222	• RAY W HAWKSLEY ECN TER WLD	2429	• DANIEL HEAVENLY ECN TBR
6153	• SETH HAWTHORNE ALT CLC ECN TER	5005	• DAVID HEAVITT CLC
7419	• HELEN L HAXICE. ALT CLC HRE OLG REC RNG TER WLD WRA	6917	• HANS C HECK ALT CLC TBR WRA
9359	• GELA HAY ALT CLC HRB OLG REC RNG TBR WLD WRA	6853	• EDNA HECKER CLCTBR
10736	• RAVI HAYASHIDA CLC OLG TER WRA	2628	• JUDY HECKMAN ALT CLC HRB OLG TBR WLD WRA
8203	• T & T HAYERUSKI ALT CLC HRB OLG REC RNG TBR WLD WRA	6217	• JOE HEDGE ALT CLC ECN OLG RNG TBR VIS WRA
		8671	• HILARY R HEDMAN CLC RDS
		1513	• WAYNE HEDRICH ECN TBR
		6891	• SISTER ANN HEDUCH ALT CLC HRB OLG TBR WLD WRA

8091	- ARTHUR HECKLER ALT CLC TBR WRA	1425	- THAYRN HENDERSON TBR
6835	- DAVID HEEP CLC RDS	4470	- MR & MRS HENDRICKS CLC TBR
3101	- MRS LORENE HEGUWOOD ALT ECN GEN	1006	- SINDE & JESSE HENDRICKS TBR
8442	- JEAN W HEILMANN ALT CLC HRB TBR	3500	- KATHY HENDRICKSON CLC TBR
6880	- MATTHEW B HEILMANN. CLC ECN H2O HRB OLG TBR WRA	6852	- RHEA HENDRIXSON CLC TBR
		6323	- CHRIS HENKE ALT CLC HRB OLG TBR WLD WRA
6618	- C E HEIMACH REC	6584	- MAUREEN HENNESSEY CLC ECN HRB TBR WLD
7676	- PAUL HEIN CLC OLG TBR WRA		
10116	- MR & MRS C E HEINKEL ALT CLC ECN OLG RNG TBR VIS WRA	5524	- PATRICIA HENNIER ALT CLC TBR WRA
		2682	- SEAN M HENNING ALT CLC HRB OLG REC RNG TBR WLD WRA
8097	- JULIA HEINLEIN ALT CLC HRB OLG REC RNG TBR WLD WRA	5326	- ACACIA HENNINGS ALT CLC HRB OLG REC RNG TBR VIS WLD WRA
3335	- ANDY HEISEY ALT CLC ECN HRB TBR WRA		
3962	- ANDY HEISEY ALT CLC GEN HRB OLG TBR WLD WRA	1288	- ALBERT HENRY REC WIN
		10520	- BRADHENRY CLC GEN HRB TBR
7752	- CHUCK HEISLEMAN CLC H2O HRB REC TBR VIS WIN	5872	- DAVE HENRY ALT CLC HRB OLG REC RNG TBR WLD WRA
6573	- JOHN HEISSEN BUTTEL REC TBR	9024	- JESSICA HENRY ALT CLC ECN OLG RNG TBR VIS WRA
10778	- MONTIE HEITZBERG ALT CLC HRB OLG REC TBR WLD WRA		
		2664	- K.A HENRY ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
1277	- GREG HEIZEL ALT		
2756	- ELDON S HEKCMAN CLC ECN	8958	- RUSSELL J HENRY CLC DRT ECN FLE H2O TBR
4891	- VIVIAN HEKMAN. ALT CLC HRB OLG REC RNG TBR WLD WRA	1930	- MICHAELS. HENSLW ALT ECN GEN
10657	- JOHN HELIN ALT CLC ECN OLG RNG TBR VIS WRA	6418	- NANCY HENSON. ALT CLC ECN GEN OLG RNG TBR VIS WRA
9558	- (FAMILY) HELLAR. CLC H2O HRB REC TBR VIS	6995	- NANCY HENSON ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
8362	- CLAIRE & MARTIN HELLAR CLC	2393	- NANCY L HENSON CLC DRT HRB REC TBR
2253	- MICK & CLAIRE HELLAR ALT CLC RDS REC RNG TRL	3564	- ROY L HENSON ALT TBR
		136	- RYAN HENSON CLC RNG TBR WRA
6262	- ANNE HELLER' ALT CLC TBR WRA	1137	- EARL D HENSON, JR. TBR
5898	- SANDY HELLERIALT CLC HRB OLG REC RNG TBR WLD WRA	9293	- JELINDA J HENSTRAND TBR VIS WIN WRA
		10518	- MARILYN HERAND CLC HRB TBR
8510	- VIRGINIA HELLIN CLC H2O OLG TBR VIS WRA	3919	- NELSON HERBBY' ALT CLC HRB OLG TBR WLD WRA
1644	- JOHN HELLINA CLC		
7369	- AMY B HELLIS. CLC OLG TBR TRL WIN WRA	1180	- AMY HERBERHOLZ TBR
9121	- MICHAEL T HELM ALT CLC HRB OLG REC RNG TBR WLD WRA	4610	- DAVID HERBERT CLC
		202	- ROSS HERBERTSON. CLC TBR WRA
11331	- TOM HELM GEN	211	- ROSS HERBERTSON CLC H2O TBR WRA
10228	- RANDY HELMHOLZ. ALT CLC TBR WRA	7410	- SHIRLEY HERINGER. ALT CLC ECN OLG RNG TBR VIS WRA
2289	- JACK L. HELSEL' ECN TBR		
3225	- DENNIS HELVM. REC TBR VIS WLD WSR	583	- BARBARA HERM CLC
9729	- MARGARET HEMBE ALT CLC HRB OLG REC RNG TBR WLD WRA	3445	- BARBARA HERM ALT CLC HRB OLG TBR WLD WRA
959	- MABELR HEMING TBR	7078	- BARBARA HERM ALT CLC ECN OLG RNG TBR VIS WRA
5412	- MRS ELS HEMMES CLC H2O HRB REC TBR VIS		
		12030	- ANDY HERMAN TBR WRA
5.973	- DANIEL HEMMEWAY ALT CLC HRB OLG REC RNG TBR WLD WRA	10741	- CLAUDIA HERMAN. CLC OLG TBR WRA
		5922	- ED HERMANN ALT CLC ECN OLG RNG TBR VIS WRA
6115	- MARGIE HEMP ALT CLC TBR WRA		
8988	- JAMES HENCH REC WRA	7929	- LAURA HERMANN ALT CLC
3141	- JOHN P HENDERSEN CLC ECN FSH GEN HRB TBR	10422	- LAURA HERMANN ALT CLC FSH HRB REC WIN WLD
10499	- CORA A HENDERSHOT-TRINKAUS ALT CLC TBR WRA	10421	- MICHAEL HERMANN. CLC HRB RDS
		9270	- BECKEY HERNANDEZ ALT CLC HRB OLG TBR WLD WRA
9003	- ADAM HENDERSON ALT CLC HRB OLG REC RNG TBR WLD WRA		
		9275	- CHUCK HERNANDEZ ALT CLC HRB OLG TBR WLD WRA
9704	- GAIL HENDERSON ALT CLC ECN OLG RNG TBR VIS WRA		
		9276	- CHUCK HERNANDEZ ALT CLC HRB OLG TBR WLD WRA
10855	- HENRY HENDERSON TBR		
8430	- J N HENDERSON CLC ECN PLN TBR	2713	- CHUCK & NANCY HERNANDEZ CLC FLE OLG RDS TBR TRL WLD WRA
9059	- JACK HENDERSON ALT CLC HRB OLG REC RNG TBR WLD WRA	3500	- DAVID HERNANDEZ CLC TBR
		9278	- ELSIE HERNANDEZ ALT CLC DRT HRB OLG TBR WLD WRA
9525	- JENNIFER HENDERSON CLC HRB		
2502	- TERRI & JOE HENDERSON ALT CLC HRB OLG TBR WLD WRA	9271	- NANCY HERNANDEZ ALT CLC HRB OLG TBR WLD WRA

1108	- SHARON L HERNANDEZ ECNTBR	2924	- WILLIS W HICKS CLC TBR
9277	- SYLVIA HERNANDEZ. ALT CLC FLE HRB OLG RDS RNG TBR WLD WRA	1732	- ROGER HICKS, MD · CLC ECN HRB TER VIS WRA
20500	- TED HERNANDEZ TRL	5925	- ROGER S HICKS, MD ALT CLC ECN H2O OLG RNG TER VIS WRA
2750	- CATHY HERNDON ALT CLC ECN HRE OLG REC RNG TBR WLD WRA	5930	- ROGERS HICKS, MD CLC ECN FSH HRB RNG TBR WLD WRA
2782	- MARK HEROTA CLC	7790	- CAROLINE HICKSON ECN HRE RDS REC TBR VIS WRA
3244	- SHARON HERR CLC REC TBR TRL WRA	597	- JIM & CAROLINE HICKSON. CLC HRB OLG RDS TER VIS WRA
13	- ERIKA A HERRAN. CLC OLG	6853	- LIS & C.W HIERHOLZER. CLC TBR
10751	- SUZAN HERREL. CLC H2O HRE REC TBR VIS	6551	- ALLAN W & DORISHIERSCH CLC
17	- LARAHERREN CLC	4079	- R W HIESTAND ALT CLC ECN HRB REC WRA
18	- MAYA HERREN: CLC OLG	1268	- KATHRYN & NEAL HIESTAND & MILLER CLC ECN HRB RDS RNG TBR
9370	- ROBERT HERREN CLC ECN HRE TBR	1105	- ANITA HIGBIE. CLC TER
11508	- ROBERT HERREN CLC HRB REC	7971	- ANITA HIGBIE ALT CLC HRB OLG REC RNG TER WLD WRA
8692	- ANTONIO HERRERA ECN TER	10617	- DAN HIGGENTETHER CLC H2O HRB REC TER VIS
4591	- RHONDA HERRERA CLC	3622	- DAVID HIGGINS CLC HRB RDS TER WRA
4304	- JOYCE HERRIN. CLC FSH HRE TER	4815	- DEBRA HIGGINS ALT CLC HRB OLG REC RNG TBR WLD WRA
6940	- JEANNE HERRING ALT CLC TBR WRA	7209	- ELMER L. HIGGINS ALT CLC ECN OLG RNG TER VIS WRA
7590	- THOMAS HERRMANN. ALT CLC ECN OLG RNG TBR VIS WRA	7579	- JOANN HIGGINS ALT CLC ECN OLG RNG TER VIS WRA
4654	- BETTY HERSH ALT CLC TBR WRA	6985	- LIZ HIGGINS ALT CLC HRB OLG REC RNG TBR WLD WRA
1240	- JOHN HERSHBERGER CLC ECN H2O RDS REC TBR	6675	- LOIS HIGGINS ALT CLC ECN OLG RNG TBR VIS WRA
2812	- JOHN HERSHBERGER ALT CLC HRB OLG TER WLD WRA	10845	- PENNY HIGGINS. TBR
8809	- MARK A. HERSHKOVITZ· CLC ECN GEN HRB RDS VIS	10844	- RICHARD HIGGINS. TER
4689	- MARILYN HERST ALT CLC TBR WRA	4844	- TIM HIGGINS. ALT CLC HRB OLG REC RNG TER WLD WRA
4690	- SHERRILL HERST· ALT CLC TBR WRA	5568	- VICTORIA M HIGGINS ALT CLC ECN OLG RNG TBR VIS WRA
5122	- MARGARITA HESCHEREIMER. ALT CLC HRB OLG REC RNG TBR WLD WRA	4798	- WENDY HIGGINS ALT CLC HRB OLG TBR VIS WLD WRA
5644	- FRANK HESKETT ALT CLC HRB OLG REC RNG TBR WLD WRA	4862	- WENDY HIGGINS. ALT CLC HRE OLG REC RNG TBR WLD WRA
8929	- D. HESS ALT CLC HRB OLG REC RNG TBR WLD WRA	9404	- DEBRA HIGH ALT CLC ECN OLG RNG TBR VIS WRA
1965	- DON HESS FSH WRA	1754	- KAREN HIGH, CLC ECN H2O HRB TBR VIS WLD WRA
1617	- DONALD B HESS CLC	10900	- KARENA HIGH ALT CLC DRT ECN FLE FSH GEN H2O HRB LND OLG OWL PLN RDS REC RNG TER TRL VIS WLD WRA WSR
1828	- DONALD B. HESS CLC	3409	- HIGH SIERRA RC&D COUNCIL LAURO DERO-JAS. DRT FLE GEN H2O TBR VIS
5111	- JENNIFER HESS. ALT CLC HRB OLG REC RNG TBR WLD WRA	7591	- JEAN HIGHLEY ALT CLC ECN OLG RNG TBR VIS WRA
2970	- ROBERT E HESS CLC TER	10584	- DEWAYNE HIGHT· CLC FSH H2O RDS REC
6016	- BARBARA HESSAN· ALT CLC ECN OLG RNG TBR VIS WRA	6914	- LARRY HILDEBRAND ALT CLC TBR WRA
6571	- RICK HEUBECK ALT CLC HRB OLG RDS TER	297	- JIM HILDINGER ALT CLC GEN
5706	- ALAN HEUBERT· ALT CLC WRA	110	- JUDITH HILDINGER ALT CLC HRB OLG TBR WLD WRA
2070	- AR. HEUER ECN TER	9537	- CHRIS HILGARDNER CLC
585	- LENNY HEUER. CLC HRE TER WRA	64	- RONALD G HILKE CLC ECN TBR
8433	- ELAINE HEUSTEN· REC	4440	- AAKON HILL ECN
9588	- MARY HEWITT· ALT CLC HRB OLG TBR WLD WRA	542	- ANDREA JOYCE HILL CLC
10089	- RAINY HEYDENBERK ALT CLC ECN OLG RNG TER VIS WRA	1517	- BARRY HILL TBR
4841	- HANCE LARE HEYRDEN· ALT C HRE OLG REC RNG TBR WLD WRA	5931	- FOREST HILL CLC HRB OLG WLD WRA
11659	- AUDI / HEYSER CLC GEN HRB OLG	9851	- HATA HILL ALT CLC ECN OLG RNG TBR VIS WRA
5770	- TONI L HIBBARD. ALT CLC ECN OLG RNG TBR WRA	325	- JACKH HILL ECN TBR
7159	- BILLY HICK ALT CLC TBR WRA	5694	- JOHN HILL ALT CLC HRB OLG REC RNG TBR WLD WRA
11182	- DCN I CLC TBR		
3888	- GREGORY HICKEY ALT CLC HRE OLG TBR WLD WRA		
10172	- BECKY HICKS CLC TBR		
8102	- BRUCE HICKS REC WRA		
11143	- DR ROGER HICKS CLC FLE HRB OLG TBR		
9528	- JENNY HICKS HRB TBR		
5801	- TRACIE I ALT CLC ECN OLG RNG TBR VIS WRA		

8539	JONATHAN HILL ALT CLC ECN OLG RNG TBR VIS WRA	2244	KAREN & UNDY HINRICH ALT CLC ECN
2696	JONATHAN I HILL CLC HRB OLG RDS TBR WLD WRA	11204	LUDWIG HINRICHS CLC TBR TRL WLD
6525	LINDA G HILL ALT CLC ECN HRE OLG RNG TBR VIS WRA	2665	WAYNE HINSDALE ATT-AT-LAW TBR
8852	LINDE HILL ALT CLC HRB OLG REC RNG TER WLD WRA	2666	THOMAS A HIRELEC ALT CLC HRB OLG TBR WLD WRA
8342	M HILL ALT CLC ECN OLG RNG TBR VIS WRA	1342	WILLIAM G HIRK TBR
5282	MELISSA HILL ALT CLC HRB OLG REC RNG TBR WLD WRA	9797	JON HIRRICHS ALT CLC TBR WRA
7014	MICHAEL HILL ALT CLC TBR WRA	2793	DEBORAH CZ HIRSCH ALT CLC ECN HRB OLG TER WLD WRA
4452	MICHAEL & JANE HILL ALT CLC HRB OLG REC RNG TBR WLD WRA	1666	NORA HIRSCH GEN
6611	PATRICK T HILL CLC ECN GEN	5679	GEOFF HIRSHFIELD ALT CLC HRE OLG REC RNG TBR WLD WRA
8596	PATRICK T HILL CLC ECN GEN	1278	KAREN HIRZEL CLC HRB TBR
10282	RICHARD K. HILL ALT CLC DRT HRB OLG TBR WLD WRA	478	NEREIT HISCOX TBR
9159	ROBERT HILL ALT CLC ECN OLG RNG TER VIS WRA	4162	MR & MRS HITCHCOCK CLC GEN HRB RNG TBR
2604	ROBERT HILL TBR	3892	SARAH HITCHCOCK CLC
6609	ROSEMARY HILL ECN GEN	8243	LAURA HITE GEN
9158	RUTH HILL ALT CLC ECN OLG RNG TBR VIS WRA	4484	MAXINE HJELT CLC
8674	STEPHEN M HILL CLC ECN HRB RNG WRA	6462	HOWARD HNANY ALT CLC RDS TBR
6159	STEPHEN M & SHERI A HILL CLC ECN HRB RDS REC RNG TBR VIS	885	BEN E CLC HRI TBF
5771	SUSAN HILL ALT CLC ECN OLG RNG TBR VIS WRA	6994	BEN E ALT CLC HRB OLG REC RNG TBR WLD WRA
8834	SUSAN HILL ALT CLC HRB OLG TBR WLD WRA	3226	MR & MRS ED HOEBS CLC ECN FSH GEN HRB TBR
4970	TIM HILL ALT CLC HRB OLG TBR WLD WRA	2423	GERALD L HOBRECHT CLC WRA
1265	TIMOTHY HILL RDS REC TBR WRA	7330	HEIDI HOCHREIN ALT CLC HRB OLG TER WLD WRA
3500	VALERIE HILL CLC TER	12057	DR & MRS RICH HOCHWALD CLC
3400	VERRA HILL CLC TER	2196	SHANA HODDY CLC TBR WLD
3979	WILLIAM HILL CLC HRB VIS WRA	9807	DANA HODGE CLC OLG TER WRA
6608	JAMES F HILL JR GEN TBR	850	ELLA HODGE & ELEANOR MCDONALD ALT CLC HRB OLG REC RNG TBR WLD WRA
7619	T HILL JR ALT CLC TBR WRA	11006	KEN & MICHELLE HODGE ALT CLC ECN FSH H2O HRE SNP TBR TRL WLD WRA
6074	LYNN C HILLARY ALT CLC HRB OLG REC TBR WLD WRA	7012	BRIAN HODGEMAN ALT CLC TBR WRA
7413	MRS J HILLERMAN ALT CLC HRB OLG REC RNG TER WLD WRA	11947	CATHY HODGES RDS
9816	TED HILLIARD CLC OLG TBR WRA	4639	HEANINE HODGES CLC HRE TBR
8485	TANYA HILLIGOSS CLC GEN HRE TER	597	JERRY & CATHY HODGES CLC HRB OLG RDS TBR VIS WRA
7630	DAVID HILLMAN ALT CLC TER WRA	6021	KATHLEEN HODGES ALT CLC ECN OLG RNG TBR VIS WRA
10647	RICHARD HILLMAN CLC H2O HRB REC TBR VIS	7035	LILLI M HODGES ALT CLC TBR WRA
8210	KINDRA P. HILLMASS AIR TBR VIS	6022	MICHAEL HODGES ALT CLC ECN OLG RNG TBR VIS WRA
12038	CHUCK HILPERT ALT TER	7952	NANCY HODGES ALT CLC TBR WRA
3736	DYLAN HILSMAN ALT CLC HRE OLG REC RNG TBR WLD WRA	3500	R HODGES CLC TBR
7890	VIRGINIA HILSMAN ALT CLC HRE OLG REC RNG TBR WLD WRA	7326	PAULA HODGKINS ALT CLC HRB OLG TBR WLD WRA
7262	THOMAS HILTON ALT CLC TBR WRA	5865	BRIAN HODGMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
1347	JAMES B & MARGARET HILTS CLC FLE GEN HRB	6163	A HOFFNER CLC TER
6653	TERESA E HILTS CLC TBR	3403	BRETHOEMAN TBR
8152	KAREN HIMMEL ALT CLC HRB OLG REC RNG TBR WLD WRA	9297	RONALD HOERBER ALT CLC HRB OLG RNG WRA
9094	MEGAN HINCHLIFFS ALT CLC TER WRA	7924	TOM & JAN HOERTKORN ALT CLC ECN OLG RNG TBR VIS WRA
10291	SHERRIL HINDIS ALT CLC TBR WRA	4532	RANDALL HOFF ALT CLC HRB OLG REC RNG TBR WLD WRA
20006	PHILIPHINES ALT ECN TER	8525	WILLIAM E HOFF ALT CLC ECN OLG REC RNG TBR VIS WLD WRA
1221	DARLENE HINKLEY TBR	2822	GEORGE HOFF ECKER ALT CLC TBR WRA
1223	WESLEY HINKLEY TBR	9258	YVETTE HOFFER CLC HRB ND RDS TBR
4814	JAMES R HINKSON ALT CLC HRE OLG REC RNG TER WLD WRA	11509	BARBARA & JANEI HOFFMAN CLC DRT HRE
4813	ROSEMARY HINKSON ALT CLC HRB OLG REC RNG TBR WLD WRA	1321	JEFF HOFFMAN A FLE HRB RDS RNG TBR
		3542	JILL HOFFMAN CLC TER
		10279	JOHN HOFFMAN ALT CLC TBR VIS WRA
		5839	KAREN HOFFMAN ALT CLC HRE OLG REC RNG TBR WLD WRA

4017	- ALICIA HOGAN. GEN	6874	- JULIAN B, HOLT' CLC
1721	- RALPH HOGAN CLC ECN HRE TBR VIS WRA	1784	- LOUHOLT LND
8289	- CHERYL HOGGE ALT CLC ECN OLG RNG TER VIS WRA	5773	- MARGARET HOLT ALT CLC ECN OLG RNG TER VIS WRA
8267	- RAY HOGGE ALT CLC DRT ECN H2O OLG RNG TBR VIS WRA	4275	- RAY R HOLT CLC VIS
4495	- DOUGLAS C. HOHEACH ECN OLG TBR	5079	- SUSAN E HOLT ALT CLC ECN OLG RNG TBR VIS WRA
3035	- HERROLD HOKAUSON CLC OLG TBR TRL	5772	- TIMOTHY HOLT ALT CLC ECN OLG RNG TBR VIS WRA
4197	- SUREN HOLBEK CLC ECN FSH REC TRL	6735	- JUNIPER MTN HOME OWNERS ASSOC REC TER WIN
5027	- SUREN HOLBEK CLC ECN GEN HRE TBR	805	- EARL O HONEY TBR
11322	- SUREN HOLEEK ALT CLC ECN HRB TER	1624	- ED & NANCY HONHOLD. RNG VIS
10934	- LARS HOLBEK ALT CLC DRT HRE	8012	- JAMES C HONSINGER ALT CLC ECN OLG RNG TBR VIS WRA
9630	- KAREN HOLBROOK TBR	10420	- CATHERINE V HONTER CLC ECN
1927	- DONALD R HOLCOMB ALT ECN GEN	11339	- ED HOOD GEN
1913	- GWEN HOLCOME ALT ECN GEN	9574	- F M HOOD CLC ECN GEN HRB LND RDS REC TBR TRL WRA
1488	- PAUL HOLCOME TBR WRA	8141	- NIKKI HOOGASIAN AIR CLC ECN FLE H2O HRE OLG REC RNG TER TRL VIS WLD WRA
9986	- KEVIN HOLCOMEE ALT CLC TBR WRA	7919	- DAVID HOOGENDYK CLC ECN HRB TBR WRA
11166	- KEN & TERRY MAE HOLD. REC TER	3981	- ANTHONY HOOKEN REC
9326	- WAYNE L HOLDAY CLC REC TBR	8307	- PAUL H HOOKER ALT CLC HRB OLG REC RNG TER WLD WRA
9647	- CATHY HOLDEN ALT CLC TBR WRA	3150	- K HOOPER CLC HRB
10717	- RUSSELL H HOLDEN ALT CLC TBR WRA	2871	- JOHN L HOOPES TBR
2689	- FRANK L HOLDER ALT TER	9880	- VICKY HOOVER ALT CLC ECN OLG TBR TRL WRA
6389	- NANCY HOLDRIDGE ALT CLC ECN OLG RNG TER VIS WRA	4067	- GARY HOPKINS. CLC DRT FLE GEN H2O HRE TER URB
10496	- CAROL G HOLDSTOCK. ALT CLC TER WRA	11418	- HEIDI HOPKINS LND
10495	- RICHARD HOLDSTOCK ALT CLC TBR WRA	2670	- JEFFERY B HOPKINS TER
10085	- TODD HOLGATE ALT CLC ECN OLG RNG TBR VIS WRA	7225	- KELLY HOPKINS. ALT CLC HRE OLG REC RNG TER WLD WRA
3805	- MEGAN HOLGOALS ALT CLC HRE OLG TBR WLD WRA	80	- CHARLES HOPPER CLC GEN HRB TER
3328	- CANDY HOLLAND CLC WRA	6503	- ELRAN HOPPER ALT CLC HRB OLG REC RNG TER WLD WRA
6252	- DAN HOLLAND ALT CLC TBR WRA	10447	- DONALD H HOPPING CLC H2O HRB REC TBR VIS
9102	- MICHAEL HOLLAND ALT CLC ECN GEN OLG RNG TBR VIS WRA	4967	- MICHAEL HORAN HRE
4540	- STEVEN HOLLAND' CLC GEN REC TBR	10995	- NYLIN HORD ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
6288	- STEVEN HOLLAND. ALT CLC TBR WRA	129	- LAURA HORGAN H2O OLG TER VIS
5537	- PATRICIA HOLLANDSUPPA ALT CLC TER WRA	1040	- PATRICIA HORGAN CLC
11529	- DON HOLLANDER CLC	10471	- JOHN A HORN ALT CLC TER WRA
11158	- GLENN M. HOLLEY ALT CLC FSH GEN TER WRA	7681	- KENNETH HORN CLC ECN OLG TBR WRA
1857	- MICHAEL H HOLLIDAY. ALT ECN REC	4401	- SHARI & CHUCK HORNBECK. CLC RNG TBR
9363	- SHANALEE HOLLINGSHEAD ALT CLC HRB OLG REC RNG TBR WLD WRA	8212	- ALEXANDER HORNBY ALT CLC HRB OLG REC RNG TER WLD WRA
1226	- JOY J HOLLOWAY CLC ECN HRE RDS REC TER VIS	9402	- RICHARD HORNBY ALT CLC ECN OLG RNG TBR VIS WRA
7635	- LEE ANN HOLLOWAY. ALT CLC TBR WRA	6852	- FORESTA HORNER CLC TER
3150	- ADONNA HOLMAN' CLC HRB	7684	- M HORNER ALT CLC TER TRL WRA
9926	- JENIFER HOLMAN CLC GEN HRE TBR	8708	- M S HORNER CLC ECN GEN TER
8186	- RON HOLMAN ALT CLC HRE OLG REC RNG TBR WLD WRA	10477	- DEBRA HORNEY' ALT CLC TBR WRA
9789	- PAUL C HOLMER' ALT CLC TBR WRA	20119	- SCOTT HORNGREN ALT OLG OWL TBR WIN
8387	- BONNIE HOLMES ALT CLC HRB OLG REC RNG TBR WLD WRA	217	- LISA HOROUITZ. CLC GEN TER WRA
8762	- ROBERT G HOLMGREN. ALT CLC ECN OLG RNG TER VIS WRA	6157	- BILL HORST CLC OLG TER WRA
8763	- SUSAN D HOLMGREN ALT CLC ECN OLG RNG TBR VIS WRA	8853	- JERRY HORTLER CLC TER
9672	- JAMES HOLMISTRON ALT CLC TER WRA	12038	- RON HORTON ALT TER
5080	- WILL HOLN ALT CLC ECN OLG RNG TER VIS WRA	6597	- ROY HORWATH CLC
2468	- JOANNE HOLSEY' ALT ECN GEN	269	- ANDREW HORWITZ CLC OLG WRA
8200	- KEVIN HOLSINGER CLC TER	7126	- ANDREW HORWITZ ALT CLC ECN OLG RNG TBR VIS WRA
2957	- EILLHOLT WRA	10111	- LINDA B HORWITZ ALT CLC ECN OLG RNG TBR VIS WRA
5052	- HUGH C HOLT ALT CLC HRE OLG REC RNG TBR WLD WRA		

1132	- DAVID J HOSBEIN, MD ALT ECN LND	2325	- P.W. HOWEY CLC DRT H20 REC TBR VIS WLD
10370	- MARC C HOSHAIKEY CLC ECN GEN HRB OLG OWL PLN RDS RNA SIA SNP TBR TRL WLD	919	- STEPHEN C HOYT FSH GEN TRL WLD
981	- ROBERT HOSKIN CLC ECN TBR	9629	- G HONG HSU CLC OLG TBR WRA
1293	- JAMES K. HOSLEY CLC H20 HRB LND OLG REC RNG TBR WLD	10174	- JERRYHUANG CLC
5292	- KELLY HOSTETLER ALT CLC ECN OLG RNG TBR VIS WRA	3500	- AGNES HUASE CLC TBR
1540	- JANE HOTCHKISS CLC ECN HRB OLG RDS REC TBR VIS	5002	- MATT HUBBARD CLC
11776	- JANE HOTCHKISS CLC ECN HRB OLG TBR	9945	- SUSIE HUBBARD CLC GEN HRB TBR
7179	- KAREN HOTTERMAN ALT CLC TBR WRA	11058	- CHARMON HUBBART ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA
6769	- D R HOUDE ALT CLC HRB OLG REC RNG TBR WLD WRA	11696	- MRS C E HUBBELL CLC
8959	- WILLIAM HOUDYSHELL ALT GEN TBR	3500	- O L HUBBELL CLC TBR
2322	- ARNOLD R HOUGEN CLC	4077	- DAYNA HUBENTHAL CLC TBR
9494	- DEVIN HOUGH ALT CLC TBR WRA	4076	- MR & MRS HUBER CLC
2295	- LON HOUGH TRL	8481	- J VANCE HUCKINS REC
10710	- ROGER L HOUGHTON ALT CLC ECN TBR WRA	1810	- ARLENE HUDSON CLC FLE HRB OLG REC TBR WLD WRA
114	- DICK HOULETTE CLC OLG RDS RNG TBR TRL WIN	7229	- ARLENE HUDSON ALT CLC DRT HRB RDS REC RNG TBR
11711	- DICK HOULETTE ALT CLC RDS REC TBR	11102	- ARLENE HUDSON CLC FLE HRB OLG RDS REC RNG TBR
3961	- RAPHAEL HOUSE, CLC	2889	- RICKY HUDSON VIS WLD
7061	- PAMELA HOUSFATHER ALT CLC HRB OLG REC RNG TBR WLD WRA	483	- ROBERT HUDSON ALT CLC HRB TBR WSR
7064	- SAM HOUSFATHER ALT CLC HRB OLG REC RNG TBR WLD WRA	1075	- RON HUDSON ALT ECN OWL TBR
780	- SUSAN HOUSTON ECN TBR	1074	- SANDY HUDSON ECN GEN TBR
10770	- HARROLD HOVEN ALT CLC HRB OLG TBR WLD WRA	1983	- DAVE HUERTA ALT ECN GEN
1984	- BOB HOWARD ALT ECN GEN	2010	- SANDRA HUERTA ALT ECN GEN
6804	- BROOK HOWARD ALT CLC HRB OLG TBR WLD WRA	9870	- TERRA HUES CLC ECN HRB TBR VIS WRA
8195	- D HOWARD ALT CLC HRB OLG REC RNG TBR WLD WRA	10083	- MARK HUFFMAN ALT CLC ECN OLG RNG TBR VIS WRA
162	- DENNIS HOWARD ALT CLC	9573	- MARY PAGE HUFFY, M D ALT CLC ECN OLG RNG TBR VIS WRA
230	- HELEN HOWARD ALT CLC HRB RDS WRA	906	- SARAH HUGDAHL CLC FLE HRB OLG TBR TRL WRA
1918	- HOPE HOWARD ALT ECN GEN	9044	- SARAH HUGDAHL ALT CLC HRB OLG REC RNG TBR WLD WRA
6853	- KRISTINE HOWARD CLC TBR	10034	- RACHAEL HUGENBERGER CLC GEN HRB TBR
451	- LEWIS M HOWARD CLC REC TBR	760	- A KEVIN HUGHES ECN TBR
10304	- LEWIS M HOWARD ALT CLC ECN OLG RNG TBR VIS WRA	7848	- AILEEN HUGHES ALT CLC TBR WRA
11509	MILDRED HOWARD, CLC DRT HRB	759	- ERIC HUGHES ECN TBR
3125	NANCY HOWARD ALT ECN GEN	3071	- JIM HUGHES GEN WRA WSR
3500	PAT HOWARD CLC TBR	4168	- JOAN HUGHES CLC GEN HRB LND OLG RDS REC RNG TBR TRL VIS WRA
3500	JOHN HOWARD CLC TBR	5097	- JODY HUGHES ALT CLC HRB OLG REC RNG TBR WLD WRA
1917	STEVEN HOWARD ALT ECN GEN	3802	- LINDA HUGHES ALT CLC HRB OLG TBR WLD WRA
4161	MARK HOWARD & RUTH HOLDRIDGE ALT CLC HRB OLG TBR WLD WRA	720	- MRS. WONNE L HUGHES ECN GEN TBR
3084	JIM HOWART ALT ECN GEN	1391	- PATRICK HUGHES TBR
1256	ANNE J HOWE CLC RDS REC WRA	10145	- PATTY HUGHES ALT CLC ECN OLG RNG TBR VIS WRA
3146	- DEBORAH L OWE ALT CLC HRB	10622	- ROD & NANCY HUGHES CLC H20 HRB REC TBR VIS
3129	- LENNY HOWE CLC HRB TBR WRA	5447	- ROSALIE HUGHES CLC H20 HRB REC TBR VIS
9182	- SHEILA HOWE ALT CLC ECN OLG RNG TBA VIS WRA	757	- TAMMY HUGHES ECN TBR
2428	- CHARLES E HOWELL GEN TBR	721	- JOHN R HUGHES, SR ECN
1374	- DALE HOWELL ECN REC TBR	323	- TOMMY HUGHES, SR GEN TBR
5995	- ELLEN M HOWELL ALT CLC HRB OLG REC RNG TBR WLD WRA	6837	- BARBARA HUGHEY CLC TBR WRA
1501	- JUDY HOWELL ECN TBR	10470	- WILLIAM HUGHSON ALT CLC TBR WRA
9805	- MELANIE HOWELL CLC GEN OLG TBR WRA	7149	- J HUHTALA ALT CLC ECN OLG RNG TBR VIS WRA
5045	- GENE HOWENTON ALT CLC ECN OLG RNG TBR VIS WRA	1345	- LORRAINE HUKILL CLC
2797	- DEBBIE HOWERY ALT CLC HRB OLG REC RNG TBR WLD WRA	10799	- DON HULL ALT CLC TBR WRA
4269	- DEBBIE HOWERY ALT CLC HRB OLG REC RNG TBR WLD WRA	5465	- DOROTHY HULL ALT CLC ECN OLG RNG TBR VIS WRA

3020	- S HULL ALT CLC ECN H2O REC TBR WRA	3703	• MRS. FRANK HUTTON' CLC ECN HRB LND
3951	- S HULL CLC TBR WRA		OLG RDS REC RNG TBR TRL WLD WRA
4035	- W C HULLENDER' CLC	11491	• MRS FRANK HUTTON' CLC ECN HRB LND
6485	- JOHN HULS ALT CLC GEN PLN RDS TBR TRL		OLG RDS REC RNG TBR TRL VIS WLD WRA
	VIS WIN WLD	866	• ORSON a LIZANN HUUTSMAN CLC WLD
3929	- DALY HULTA ALT CLC HRB OLG REC RNG	1147	• CLIFFORD D HYATT TBR
	TBR WLD WRA	20010	• ELLEN HYATT CLC REC TBR TRL
7956	- JOAN M HUMPHREY ALT CLC TBR WRA	4135	• JASON HYATT CLC OLG TBR WRA
6454	- NANCY HUMPHREYS ALT CLC ECN OLG	9553	• MARJORE HYDE CLC H2O HRB REC TBR VIS
	RNG TBR VIS WRA	9561	• MININIE B. HYDE CLC H2O HRB REC TBR VIS
1480	- RAJ HUNDAL CLC TBR	4382	• RICHARD HYDE, JR REC
2844	- CASSANDRA HUNDEMER' ALT CLC HRB OLG	9515	• SEAN E HYLAND ALT CLC ECN OLG REC
	TBR WLD WRA		RNG TBR VIS WRA
5889	- LT HUNDLEY ALT CLC HRB OLG REC RNG	2897	• ROBERTHYMAN CLC
	TBR WLD WRA	6989	• NEIL HYMORD ALT CLC HRB OLG REC RNG
9387	- DENISE HUNLY ALT CLC TBR WRA		TBR WLD WRA
8107	- CHRISTIE HUNNER ALT CLC ECN GEN OLG	1598	180 CHAIN SERVICES WILLIAM & BARBARA
	RNG TBR VIS WRA		WAUTERS ALT CLC ECN HRB RNG TBR WRA
8237	E EUGENE HUNNER, JR ALT CLC ECN OLG	2523	KEN a TENAYA MICHELE IDEKER ALT CLC
	RNG TBR VIS WRA		HRB _G RDS TBR TRL
2351	CARLI HUNT. GEN TBR	10952	K. IDEKER. ALT
8955	CINDY HUNT ALT CLC ECN OLG REC RNG	2759	- NAOMI GRA CLC REC VIS
	TBR VIS WRA	4349	- MR a S TONY ILARDI RNG TB VIS
4761	CLARA HUNT CLC OLG TBR VIS WRA	1135	- IMPERIAL HARDWOOD WILLIAM N LAMB
9698	DON HUNT. ALT CLC TBR WRA		ECN TBR
8447	DORA G HUNT' ALT CLC GEN RNA RNG TBR	6691	- GREG INCHAUSPE ALT CLC ECN OLG RNG
	WRA		TBR VIS WRA
3281	- JOHN M HUNT CLC	6066	• GRACE INFANTE CLC RDSTBR
660	- MARK HUNT ECN	5010	• AUDREY INGELSEN CLC OLG TBR
20448	• THOMAS H HUNT TBR	610	• DAVID W INGERSALL CLC ECN RDS RNG
10940	- JANA HUNT ALT CLC ECN HRB TBR WRA		TBR
6349	• HUNTER ALT CLC ECN OLG RNG TBR VIS	7805	- SUE INGLE. ALT CLC TBR WRA
	WRA	4368	- JUDY INGLES. CLC REC WSR
9361	- CHRISTINA HUNTER ALT CLC HRB OLG REC	603	• BLAKE INGRAHAM' CLC ECN GEN OLG RNG
	RNG TBR WLD WRA		TBR WRA
3668	- DUTCH HUNTER. CLC WRA	1309	- BLANCHE L INGRAHAM. ALT CLC ECN HRB
823	- HENRY F HUNTER ECNTBR		OLG REC TBR VIS WLD
6052	• PAULA HUNTER' ALT CLC HRB OLG REC RNG	6014	• ALRIENA M INGRAM ALT CLC ECN OLG REC
	TBR WLD WRA		RNG TBR VIS WRA
7372	- KENYAN HUNTES CLC OLG TBR WRA	2826	• GENEVIEVE E INGRAM CLC HRB
10852	• SONIA HUNTLE' ALT CLC TBR WRA	427	• ROBERT INGRAM CLC HRB RNG
7798	• MICHAEL P HUNTLEY' ALT CLC ECN OLG	3561	• ROBERT INGRAM CLC HRB
	RNG TBR VIS WRA	4438	• JAMES INMAN ECN OWL TBR VIS
10001	- HEATHER HUOMARE CLC GEN HRB TBR	9401	- JIM INMAN ALT CLC ECN OLG RNG TBR VIS
11500	• KIRK HUR CLC		WRA
3317	- MARCELLA HURDT. ALT CLC HRB OLG TBR	7507	- SHAR INPE. ALT CLC HRB OLG REC RNG TBR
	WLD WRA		WLD WRA
5107	• DENNIS HURLEY ALT CLC HRB OLG REC	7089	- DEBBIE IRELAND ALT CLC ECN OLG RNG
	RNG TBR WLD WRA		TBR VIS WRA
1894	• GEORGE HURLEY. TBR	4603	• LAVERNE IRELAND ALT CLC RDS TBR TRL
718	- PATRICK HURLEY' GEN H2O LND REC RNG		WRA
	TBR WLD	10005	• MEGAN IRES CLC GEN HRB TBR
8858	- RICHARD HURLEY' ALT CLC ECN OLG RNG	3625	• EARNEST E IRVINE CLC HRB
	TBR VIS WRA	8400	- GAIL IRVINE CLC REC TBR
5980	- ANITA HURST ALT CLC HRB OLG REC RNG	8401	• RICH IRVINE REC
	TBR WLD WRA	6748	• VIVIAN L IRVINE REC
1550	DENNIS C. HURST TBR	12051	• IRVINGTON MOORE FPD GARY HOGUE' TBR
8298	• SAMUEL HURWITH CLC OLG TBR WRA	8558	- DANIELS IRWIN, CLC OLG TBR WLD WRA
5654	- MICHAEL HUSLIEN' ALT CLC HRB OLG REC	2169	• JOHN W IRWIN CLC ECN GEN RDS TBR
	RNG TBR WLD WRA	2035	• ANITA ISAACS ALT ECN GEN
9207	• WALTER a VIVIAN HUSON. CLC	6854	• JOHN D ISBELL ALT CLC ECN HRB OLG REC
2541	• EDWARD M. HUSSONG. CLC WRA WSR		RNG TBR WLD WRA
4925	- DAVID SHAWNE HUTCHESON ALT CLC HRB	20516	- ISHE TRAILS PRESERVATION COUNCIL HELEN
	OLG REC RNG TBR WLD WRA		MADELIENE HST TBR TRL
9763	- ROBERT HUTCHINSON. ALT CLC TBR WRA	131	• AMAD ISRAEL CLC HRB OLG REC RNG TBR
9637	• SHERRILL HUTRELL' ALT CLC TBR WRA	6432	- AMAD ISRAEL ALT CLC ECN OLG RNG TBR
2978	• MO DALY HUTTER ALT CLC GEN HRB C		VIS WRA
	REC RNG TBR WLD WRA		

9519	- KARIL ISRAEL' CLC H20 HRB TRL	1710	- DON JACOBSON CLC ECN HRE TER VIS WRA
6292	- DR a MRS N ISREAL ALT CLC TBR WRA	2307	- DON JACOBSON ALT FSH OLG RDS REC RNG TBR TRL VIS WRA
3029	- TERRY ITANO CLC HRE RDS	3318	- DON JACOBSON ALT CLC HRE TBR
3843	- TERRY ITANO CLC HRB RDS	3868	- DON JACOBSON OLG REC TBR
9892	- TONY IUPPA DRT ECN H20 TBR VIS	4447	- DON JACOBSON ALT CLC HRB OLG SIA TRL VIS WLD WRA
4492	- JOAN IVAZES ALT CLC ECN HRB OLG RNG TBR VIS WRA	4543	- DON JACOBSON ALT CLC HRB OLG REC RNG SIA TBR WLD WRA
4641	- SUSAN IVERSEN CLC HRB TER	7931	- DON JACOBSON ALT CLC ECN OLG RNG TBR VIS WRA
9741	- N IVERSON ALT CLC ECN OLG RNG TBR VIS WRA	10824	- DON JACOBSON ALT ECN FSH H2O OWL PLN RNG TBR WLD
488	- WAYNE D IVERSON ALT ECN FSH H20 REC TBR VIS WLD WRA	7895	- DORIS & ALLAN JACOBSON ALT CLC HRB OLG REC RNG TBR WLD WRA
783	- BRIAN & BARBARA IVEY ECN TER	1011	- HEATHER JACOBSON TER
5339	- JASON IVEY ALT CLC HRB OLG REC RNG TBR WLD WRA	1198	- HEATHER JACOBSON TBR
745	- CLAIR IVEY, JR ALT GEN TBR VIS	4702	- LEAH JACOBSON CLC
2626	- J H BLEVINS SAWMILLS DAVID SNODGRASS TBR	9928	- PAUL JACOBSON CLC GEN HRE TBR
7831	- ZAN JABETLER ALT CLC TBR WRA	4310	- RICHARD JACOBSON ALT CLC ECN HRB OLG RDS TBR WRA
3280	- ALAN P JACKMAN CLC HRB REC TBR WLD	2943	- SHANNON JACOBSON CLC TER
9603	- ALAN P JACKMAN ALT CLC TSR WRA	239	- VERNA I JACOBSON REC
11033	- CARL JACKOVICH ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA	202	- ANGELA JACBUCCI ALT CLC HRB OLG REC RNG TBR WLD WRA
9867	- DIANA G JACKSON ALT CLC HRB OLG TBR WLD WRA	3400	- PEGGY JACOBY CLC TBR
3932	- ELIZABETH JACKSON CLC DRT H2O HRB REC RNG TBR WLD	730	- GORDON E JACQUEMIN ECN TER
4188	- ERNEST JACKSON H2O TRL	859	- JAY C JACQUEMIN TBR WLD WRA
1515	- GEORGE JACKSON TBR	10813	- JAMAL JADALLAH REC
1386	- HELEN JACKSON GEN	7878	- BOB JAFFE ALT CLC HRB OLG REC RNG TBR WLD WRA
1385	- KENNETH JACKSON' ALT GEN	10877	- SYRUS JAFFE CLC TER
5561	- KIMBERLY JACKSON ALT CLC HRB OLG REC RNG TBR WLD WRA	1309	- JAGEL ALT CLC ECN HRB OLG REC TBR VIS WLD
8612	- MARTY JACKSON ALT CLC HRB OLG TBR WLD WRA	11024	- LEROY a JANECA JAGERMerno ALT CLC ECN FSH H20 HRE SNP TBR TRL WLD WRA
1394	- MICHAEL P JACKSON TSR	9355	- MICHELLE JAIME ALT CLC HRB OLG REC RNG TBR WLD WRA
1393	- SHELDON W JACKSON GEN	9099	- JIM JAISDAM ALT CLC TBR WRA
1393	- MRS CAROL JACKSON GEN	9615	- LYNNA JALLOWAY ALT CLC TBR WRA
1397	- PATRICK K. JACKSON ECN REC	5175	- MICKEY JOHN JAMELE ALT CLC ECN OLG RNG TBR VIS WRA
6927	- ROBERT M JACKSON ALT CLC TBR WRA	8828	- BRUCE JAMES CLC
5837	- RUSSEL JACKSON ALT CLC HRE OLG REC RNG TBR WLD WRA	5958	- EDITH P JAMES ALT CLC HRB OLG REC RNG TBR WLD WRA
9548	- SEAN P. JACKSON CLC HRB	8938	- LEE S JAMES ALT CLC HRB OLG REC RNG TBR WLD WRA
1380	- SHAUNA JACKSON, ECN TER	6207	- MAUREEN JAMES, ALT CLC ECN OLG RNG TER VIS WRA
1388	- SHELDON L JACKSON ALT GEN	5957	- ROBERT C JAMES ALT CLC HRB OLG REC RNG TBR WLD WRA
10016	- TAMMY JACKSON CLC GEN HRE TBR	8283	- SANDRA JAMESON ALT CLC ECN OLG RNG TER VIS WRA
1395	- WENDY L JACKSON GEN TER VIS WLD	36	- JULIE JAMIESON & SCOTT PATERSON CLC TBR
9828	- GLORIA J JACKSON & L L LARSEN ALT CLC TBR WRA	87	- JULIE JAMIESON & SCOTT PATERSON CLC ECN GEN TER VIS
23	- HELENA JACOB CLC	6936	- J DAVID JAN ALT CLC TER WRA
10424	- LYNDA JACOB ALT CLC GEN H20 OLG OWL RDS RNG TBR TRL VIS WIN WLD WRA	8936	- THOMAS JANKOWSKI ALT CLC HRB OLG REC RNG TBR WLD WRA
8015	- AARON JACOBS ALT CLC ECN OLG RNG TER VIS WRA	5968	- LORI JANNEY ALT CLC HRB OLG REC RNG TBR WLD WRA
3360	- CHERYL JACOBS CLC	6308	- CHRIS JANOWSKI CLC
7612	- DEANE JACOBS ALT CLC TBR WRA	12037	- CRAIG JANSEN CLC TBR
3500	- KATHERYN JACOBS CLC TER	2796	- HENRI a MARGARET JANSEN CLC H2O HRB VIS WSR
9043	- MARTY JACOBS ALT CLC HRB OLG REC RNG TBR WLD WRA	1854	- DELMAR JANSON ALT CLC ECN HRB OLG RDS TBR WLD WRA
1848	- MICHAEL H JACOBS TBR		
2790	- RENEE J JACOBS CLC HRB RDS REC TBR VIS		
9420	- SHERRY JACOBS ALT CLC ECN OLG RNG TBR VIS WRA		
2428	- HOWARD JACOBSEN GEN TBR		
11086	- DAVE JACOBSON ECN GEN		
2847	- DIANE M JACOBSON CLC HRB OLG TBR WRA		

3309	- DELMAR JANSON. CLC GEN HRB TBR	1705	- DALE JENSEN CLC ECN HRB TBR VIS WRA
891	- VAN JANWAY ECN TBR	11254	- DALE JENSEN CLC ECN HRB TBR
1079	- DEBORAH L JAQUEZ' ECN	8664	- DALE C JENSEN ALT CLC ECN FSH H20 HRB OLG RDS REC RNG TBR TRL VIS WIN WLD WRA
11095	- PHILIP T JAQUEZ. ALT ECN	6578	- DEBORAJENSEN ALTCLCHRBOLGTBR WLD WRA
860	- PHILLIP T JAQUEZ ALT TBR	1460	- DENA JENSEN CLC ECN HRB TBR
1176	- RICHARD JAQUR ALT TBR	838	- EMILY JENSEN CLC GEN HRB OWLTBR
11096	- RICHARDJAQUR TBR	8653	- R JENSEN CLC GEN HRB OLG TBR TRL VIS
1080	- ROBINKAY JAQUEZ TBR	1247	- RNER DARIN JENSEN CLC OLG
6853	- DENISE JARAMILLO. CLC TBR	1219	- ROBERTA JENSEN CLC ECN HRB OLG TBR
5631	- KEITH JARDINE ALT CLC HRB OLG REC RNG TBR WLD WRA	9907	- ROBERTA JENSEN HRB TBR
3432	- ERIN JARED CLC OLG TBR WRA	11218	- ROBERTA JENSEN CLC GEN HRB TBR
7438	- MARQUSSA JARED ALT CLC HRB OLG REC RNG TBR WLD WRA	1735	- ROBERTA L JENSEN CLC ECN HRB OLG TBR VIS WRA
4266	- SHIRLEY JARNE ALT CLC HRB REC TBR WRA	1248	- TAO JENSEN CLC
8515	- MODIN JAROARETTE CLC GEN OLG TBR WRA	5156	- TAO JENSEN ALT CLC ECN OLG RNG TBR VIS WRA
6659	- JACK JAROSCAK ALT CLC ECN OLG RNG TBR VIS WRA	440	- RALPH S JENSEN, M D CLC H20 HRB OWL TBR VIS
8900	- PEGGY J JAROSCAK ALT CLC ECN OLG RNG TBR VIS WLD WRA	702	- JERRY JENSON ECN TBR
7565	- VALERIE JAROSE ALT CLC ECN OLG RNG TBR VIS WRA	7352	- LEIF C JENSSSEN CLC OLG TBR WRA
10240	- NAOMI JAROUT' ALT CLC TBR WRA	7654	- DEBORAH JERMORMAN ALT CLC TBR WRA
10935	- CINDY JARSMAN CLC	2128	- JERINE JERVOSO CLC
5862	- AMI JARSON ALT CLC HRB OLG REC RNG TBR WLD WRA	8419	- ROBERT W JESSEN, RPF 1048' DRT ECN RNG TBR VIS WLD
2597	- ERIC W JARVIS' CLC DRT WRA	3658	- D JAI JETT' CLC H20 OLG RDS RNG TBR WLD
123	- LAUREN JASCHEK. CLC OLG	9435	- MANUEL JIMENEZ ALT CLC ECN OLG RNG TBR VIS WRA
11473	- LAUREN JASCHEK CLC HRB RNG	514	- MICHAEL JIMENEZ CLC HRB RNG TBR
3545	- CHERYL JASCHOK CLC ECN H20 OLG OWL REC RNG TRL WRA	2603	- ROSALIO D JIMENEZ ECN
1827	- GARY E JASMER TBR	9771	- CHARLES JIMYKE ALT CLC TBR WRA
8941	- MARJORIE JASSONSKI ALT CLC TBR WRA	8636	- DON JINKS ALT CLC ECN OLG REC RNG TBR VIS WRA
2470	- KATHLEEN E JAW ALT ECN GEN	258	- C W JOBE CLC ECN HRB REC TBR WRA
9557	- PAUL JAYURIAN. CLC	7038	- SHARLEE RYANT JODEY ALT CLC TBR WRA
7259	- JOHN P. JEESINCI. ALT CLC TBR WRA	2638	- JENNIFER JOE CLC HRB
5749	- SANDRA M JEFFERIES ALT CLC HRB OLG TBR WLD WRA	1018	- JOE CHEVREUX CONCRETE JOE CHEVREUX ECN TBR
3606	- JOHN & FAMILY JEFFESON ECN GEN	9983	- JOHN JOHNASE. ALT CLC TBR WRA
1194	- JEFFREY D DEISS CLC RDS WRA	4947	- CHERYLENE R JOHNSON ALT CLC ECN OLG RNG TBR VIS WRA
9378	- TIM JEFFRIES CLC ECN RDS TBR	3895	- WORN JOHNS ALT CLC HRB OLG RNG TBR WLD WRA
6350	- GAYLORD JENIVALL' ALT CLC HRB OLG REC RNG TBR WLD WRA	4540	- WORN JOHNS CLC GEN REC TBR
8644	- DWIGHT W JENKINS CLC	5727	- RICHARD A JOHNS REC WRA
11138	- JOANNE JENKINS GEN	4595	- ADRIAN JOHNSON CLC TBR WLD
4435	- MARK JENKINS TBR	9923	- ANIE JOHNSON CLC GEN HRB TBR
2264	- ROGER JENKINS CLC	5470	- BELDEN JOHNSON ALT CLC ECN OLG RNG TBR VIS WRA
9407	- TOM JENKINS ALT CLC ECN OLG RNG TBR VIS WRA	5153	- BENJAMEN JOHNSON ALT CLC ECN OLG RNG TBR VIS WRA
1331	- WILLIAM C JENKINS CLC RNG TBR	471	- BILL JOHNSON CLC
1838	- KEN JENKS CLC HRB RNG TBR WSR	2065	- BOYD JOHNSON CLC ECN HRB RDS TBR VIS
6440	- DARYL JENNINGS ALT CLC ECN OLG RNG TBR VIS WRA	4518	- BRENDA JOHNSON CLC HRB OLG RNG TBR TRL WLD
9165	- DON JENNINGS ALT CLC ECN OLG RNG TBR VIS WRA	958	- CLYDE JOHNSON TBR
551	- DONALD E JENNINGS CLC FLE RNG TBR	9521	- CORY JOHNSON TBR TRL
4494	- JOHN JENNINGS TRL	5119	- CURT JOHNSON ALT CLC HRB OLG REC RNG TBR WLD WRA
555	- LOIS F JENNINGS CLC DRT ECN TBR	1677	- CURTISS A JOHNSON ECN
4317	- STEPHANIE ANN JENNINGS CLC	7166	- DARRELL JOHNSON ALT CLC TBR WRA
11655	- JOAN C JENRICK ALT	5491	- DAVID JOHNSON ALT CLC ECN OLG RNG TBR VIS WRA
8991	- JOHN C JENRICK CLC	6853	- DAVID P JOHNSON CLC TBR
8810	- MARY E JENRICK CLC HRB RDS TBR WLD	7861	- DENNIS JOHNSON ALT CLC HRB OLG REC RNG TBR WLD WRA
7947	- ALLEN JENSEN ALT CLC ECN OLG RNG TBR VIS WRA		

2653	- DONELLA JOHNSON: ALT CLC GEN HRB OLG RDS TBR	2208	- ALLAN JOHNSTON: CLC H20 HRB OLG REC WLD WRA
5039	- DONNA JOHNSON: ALT CLC HRB OLG REC RNG TBR WLD WRA	3459	- AUBREY JOHNSTON: CLC
960	- DOREEN M. JOHNSON: CLC TBR VIS	101	- DODIE JOHNSTON: CLC HRB RNG TBR WRA
6386	- ELIZABETH JOHNSON: ALT CLC ECN OLG RNG TBR VIS WRA	3500	- GERRY JOHNSTON CLC TBR
8453	- ELIZABETH JOHNSON: ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	3500	- GLEN JOHNSTON: CLC TBR
1324	- ERIC JOHNSON: CLC ECN HRB LND OLG RDS REC RNG TRL WLD WRA	7714	- KELLY JOHNSTON: ALT CLC ECN OLG RNG TBR VIS WRA
9809	- ERIC JOHNSON: ALT CLC TBR WRA	623	- STEVEN C. JOHNSTONE: ECN TBR
2007	- FAITH JOHNSON: ALT ECN GEN	10392	- NANCY JOHORDENSTEN: CLC ECN FAC HRB MIN PLN RNG TBR VIS
2216	- FRAN JOHNSON: REC	4714	- BRIAN JOINER CLC HRB TBR
7075	- GAIL JOHNSON: ALT CLC ECN HRB OLG RNG TBR VIS WRA	2370	- TOM JOINER: TBR
769	- GREG JOHNSON: TBR	9751	- ALLAN G. JONES: ALT CLC TBR WRA
10500	- GREG, PAT, & BOB JOHNSON: ECN RDS TRL	4939	- BARBARA JONES: ALT CLC ECN HRB OLG RNG TBR VIS WRA
10816	- J. JOHNSON: CLC OLG RDS TBR	6653	- BARBARA JONES: ALT CLC ECN OLG RNG TBR VIS WRA
10743	- JAMES JOHNSON: ALT CLC TBR WRA	6017	- BRITTA JONES: ALT CLC ECN OLG RNG TBR VIS WRA
4117	- JANET JOHNSON: ALT CLC HRB OLG TBR WLD WRA	462	- BRUCE & MAE JONES: CLC H20 RDS TBR
2399	- JIM JOHNSON: CLC ECN HRB TBR	2496	- BRUCE & MAE JONES: ALT CLC HRB OLG TBR WLD WRA
6612	- JULIE JOHNSON: ALT CLC ECN OLG RNG TBR VIS WRA	5720	- CARLETTA JONES: ALT CLC HRB OLG TBR WLD WRA
2583	- KEN JOHNSON: TBR	10868	- CARTER JONES: CLC HRB TBR
10909	- L. JOHNSON: TBR	10139	- CLINTON W. JONES: ALT CLC ECN OLG RNG TBR VIS WRA
8701	- LANCE M. JOHNSON: CLC TBR	7140	- CRAIG JONES: ALT CLC ECN OLG RNG TBR VIS WRA
3123	- LUELLAR JOHNSON: ALT ECN GEN	7145	- DEAN JONES: ALT CLC ECN OLG RNG TBR VIS WRA
3518	- MARCIA JOHNSON: HRB OLG WRA	6902	- EDITH M. JONES CLC
5700	- MARCIA JOHNSON: ALT CLC HRB	2977	- EMIL B. JONES: CLC FSH H20 TBR VIS WRA
11509	- MARK S. JOHNSON: CLC DRT HRB	4256	- EVAN JONES: CLC
8574	- MARLISA JOHNSON: CLC ECN HRB TBR VIS WLD WRA	6399	- EVERETT JONES: ALT CLC ECN OLG RNG TBR VIS WRA
3245	- MICHAEL JOHNSON: CLC ECN FSH HRB TRL VIS	4837	- FRANKLIN C. JONES: ALT CLC HRB OLG REC RNG TBR WLD WRA
775	- MIRL JOHNSON: ALT ECN TBR	7302	- GINNY JONES: ALT CLC ECN OLG RNG TBR VIS WRA
4343	- MR. & MRS. JOHNSON: REC	3500	- HAZEL JONES: CLC TBR
10820	- MR. & MRS. JOHNSON: CLC FLE TBR	8542	- J. ALLEN JONES: ALT CLC ECN OLG RNG TBR VIS WRA
10598	- MR. & MRS. NEIL JOHNSON: RNG	5635	- JACLYN JONES: ALT CLC HRB OLG REC RNG TBR WLD WRA
5439	- MR. & MRS. WARREN JOHNSON: CLC TBR	7620	- JIM JONES: ALT CLC TBR WRA
7617	- MYRNA JOHNSON: ALT CLC TBR WRA	5868	- JODI JONES: ALT CLC HRB OLG REC RNG TBR WLD WRA
1916	- MYRON E. JOHNSON: ALT ECN GEN	8962	- K.R. JONES CLC
8117	- NANCY JOHNSON: ALT CLC ECN OLG REC RNG TBR VIS WRA	3819	- LINDA JONES CLC
4115	- NORMAN JOHNSON: GEN	10670	- LINDA JONES: ALT CLC HRB OLG REC RNG TBR WLD WRA
10652	- PATTY JOHNSON: ALT CLC ECN OLG RNG TBR VIS WRA	10826	- MARRY LEE JONES: CLC OLG TBR WRA
1089	- REBECCA JOHNSON: ALT CLC	20503	- MARTIN & NANCY JONES: TBR
4672	- REED JOHNSON: ALT CLC TBR WRA	2569	- MRS. LILAS J. JONES: CLC
3500	- DAVID JOHNSON: CLC TBR	683	- MRS. WEBSTER T. JONES: ALT CLC ECN HRB
3500	- ROBERT JOHNSON: CLC TBR	2939	- NORMAN JONES: CLC ECN FSH GEN HRB TBR
7437	- RONALD D. JOHNSON: ALT CLC HRB OLG REC RNG TBR WLD WRA	4177	- R. MERRILL JONES: RDS TRL
6243	- SALLY JOHNSON: ALT CLC ECN OLG RNG TBR VIS WRA	60	- RAY STEPHEN JONES: CLC ECN HRB RNG TBR
1352	- SCOTT JOHNSON: CLC DRT HRB OLG REC TBR WRA	10935	- ROBERTA LEE JONES: CLC
6859	- SCOTT JOHNSON: VIS	3554	- SHARI JONES: CLC
7164	- STEPHANIE JOHNSON: ALT CLC TBR WRA	7202	- SUSAN JONES: ALT CLC ECN OLG RNG TBR VIS WRA
3394	- SUE JOHNSON: CLC ECN HRB VIS	7909	- TODD JONES: CLC GEN TBR
2925	- WALTER JOHNSON: CLC HRB	10140	- VALERIE JONES: ALT CLC ECN OLG RNG TBR VIS WRA
5178	- WALTER JOHNSON: ALT CLC ECN OLG RNG TBR VIS WRA		
9231	- JOHNSON & NEWTON: CLC H20 HRB REC TBR VIS		
8817	- SUZANNE JOHNSONS: CLC		
7715	- SAMARA JOHNSTOIN: ALT CLC ECN OLG RNG TBR VIS WRA		

10977	- SADHANA JONES ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	10204	- GRETCHEN JUNG. ALT CLC TBR WRA
1749	- JOOND. CLC ECN HRB TBR VIS WRA	1214	- PAMELA JUNG CLCECN
4350	- EVA JORDAN, ALT CLC HRB OLG REC RNG TBR WLD WRA	6853	- DENISE JURILSON CLC TBR
4097	- JAMES JORDAN CLC	4623	- WILLIAM JUST CLC HRB WRA
5800	- JOE JORDAN ALT CLC ECN OLG RNG TBR VIS WRA	5014	- MARCIA JUSTICE CLC ECN HRB TBR VIS WRA
882	- LELAND H & CAROLINE JORDAN CLC GEN OLG REC TBR WRA	3500	- STEVE JUSTIN CLC TBR
5329	- PHILIP JORDAN ALT CLC HRB OLG REC RNG TBR WLD WRA	11274	- TODD JUVINALL ALT GEN
5163	- ROBERT JORDAN ALT CLC ECN OLG RNG TBR VIS WRA	4127	- PAM KAAYA-SHIELDS CLC ECN HRB REC TBR WLD
5632	- SHERRI JORDAN ALT CLC HRB OLG REC RNG TBR WLD WRA	7391	- SEAN KAER CLC OLG TBR WRA
7685	- SHERRI JORDAN ALT CLC H2O HRB OLG REC RNG TBR WLD WRA	7726	- HELEN KAGERER ALT CLC HRB OLG REC RNG TBR WLD WRA
5164	- ANNETTE M JORDON ALT CLC ECN OLG RNG TBR VIS WRA	9992	- JOSHUA KAHAN ALT CLC TBR WRA
10294	- DORIS JORDON ALT CLC TBR WRA	11178	- JUDITH KAHLE GEN H2O OLG TBR WRA WSR
6066	- MINDA JORGENSEN CLC RDS TBR	337	- PETER & ADELE KAHN CLC
1607	- PAUL JORGENSEN CLC FLE HRB RDS REC TBR TRL	404	- MRS DOROTHY KAIN ALT CLC ECN TBR
6807	- GEORGE E & DELLA JORGENSEN: CLC TBR	11721	- WARREN KAIN CLC FSH HRB OLG REC TBR WLD
24	- PAUL & EILEEN JORGENSEN CLC	3842	- ROBERTA KAISER ALT CLC REC TBR WRA
3500	- A JOSEPH CLC TBR	3294	- ROBERTA A KAISER CLC REC TBR WRA WSR
5964	- R L JOSEPH ALT CLC HRB OLG REC RNG TBR WLD WRA	94	- JULIE E KALLIHER CLC GEN
1612	- RONNA & MICHAEL JOSEPH CLC HRB	1596	- JOAN & DUANE KALMAN CLC HRB TBR
6610	- SAK JOSHUA. ALT CLC ECN OLG RNG TBR VIS WRA	399	- MIKE KALMANSON CLC FSH WSR
3038	- JOLEEN JOSLIN. ALT CLC TBR WRA	9959	- MARTY KALSLEDEK CLC GEN HRB TBR
3037	- ROBERT JOSLIN. ALT CLC TBR WRA	1792	- OLE KALVE. ECN TBR
2527	- MARILYN B JOUINI ALT OLG RDS TBR WLD WRA	1309	- ELEANOR KAMBEITZ ALT CLC ECN HRB OLG REC TBR VIS WLD
8169	- JAMES D JOWFOS ALT CLC HRB OLG REC RNG TBR WLD WRA	3033	- CHRIS KAMM ALT CLC HRB OLG TRL VIS WRA
1183	- J D JOY ALT CLC ECN GEN REC TBR WRA	3841	- CHRIS KAMM CLC FLE HRB OLG TBR WRA
9697	- MARILYNA JOY ALT CLC TBR WRA	326	- CHRISTOPHER W KAMM CLC TBR
2948	- ANNE CLARK JOYCE CLC TBR	8688	- KATHLEEN KAMMERER CLC
9594	- MATT JOYCE CLC HRB OLG RDS TBR	5754	- PAUL D. KAMMY. ALT CLC HRB OLG REC RNG TBR WLD WRA
903	- MICHAEL JOYCE CLC GEN RDS TBR	20510	- DAVID KAMP. TBR
8133	- STACY KEMUL JOYCE CLC ECN HRB TBR VIS WRA	8293	- JON KAMP CLC OLG REC TBR WRA
3770	- CHARLETTE JUARCEYS ALT CLC ECN TBR VIS	4321	- JONELLE KANAVEL ALT CLC HRB OLG REC RNG TBR WLD WRA
10531	- JANOD JUBAUC CLC GEN HRB TBR	9380	- JONILLE KANAVEL ALT CLC TBR WRA
5624	- BLAINE JUCHAR ALT CLC HRB OLG REC RNG TBR WLD WRA	9997	- RICHARD A KANAVEL ALT CLC TBR WRA
11750	- JAMAL JUDALLAH RDS TBR TRL	5569	- KYLE KANAWPER ALT CLC HRB OLG REC RNG TBR WLD WRA
1087	- CANDACE & TED JUDD. TBR WLD WRA	6996	- JEFFREY H KANE ALT CLC HRB OLG REC RNG TBR WLD WRA
4082	- MICHAEL JUDGE CLC HRB TBR	4642	- KATE KANE CLC HRB OLG RDS TBR TRL VIS WLD
3619	- PAUL JUDGE ECN GEN HRB OLG RNG TBR WLD WRA	7346	- PREM D KANE ALT CLC HRB OLG REC RNG TBR WLD WRA
5028	- PAUL JUDGE GEN OLG RNG TBR	11242	- DR JEFF KANE, MD CLC HRB TBR
11323	- PAUL JUDGE ECN GEN HRB OLG RDS RNG TBR	1702	- JEFFREY H KANE. M D CLC ECN HRB TBR VIS WRA
10996	- KEVIN JUDGE ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	7171	- MICHAEL G KANNA ALT CLC TBR WRA
1052	- PHIL JUDSON ECN	330	- ROBERT M KANNE ALT ECN RDS REC RNG TBR TRL WLD WRA
4775	- STEPHAN JULIE CLC GEN OLG TBR WRA	5919	- JAMES P KANY ALT CLC ECN OLG RNG TBR VIS WRA
6079	- J JULINETTE ALT CLC HRB OLG REC TBR WLD WRA	4808	- DIANE KAPLER ALT CLC HRB OLG REC RNG TBR WLD WRA
2563	- PATRICIA J JULIVAS CLC ECN TBR WRA	6259	- RICHARD KARBAN ALT CLC TBR WIN WRA
5541	- GUIRTH JUNB ALT CLC TBR WRA	4045	- JODIE KARHAN CLC FSH HRB TBR
4648	- KATHERINE JUNCKER ALT CLC TBR WRA	3489	- MR & MRS WILLIAM KARIDAN CLC
9656	- MONICA L JUNE ALT CLC TBR WRA	4525	- JONATHAN KARL CLC GEN RDS TRL WRA
4128	- CLAIRE & FRED JUNG ALT	6494	- GEOFFREY L KARLSON ALT CLC ECN OLG RNG TBR VIS WRA
		6493	- SAYA KARLSON ALT CLC ECN OLG RNG TBR VIS WRA
		9871	- KATHY KARNITZ ALT CLC HRB OLG TBR WLD WRA

5847	- ROBERT KAROLL ALT CLC HRB OLG REC RNG TBR WLD WRA	4370	- CAAOLEKELLER REC
7011	- ROBERT KAROLL ALT CLC TBR WRA	7218	- CHRISTINE KELLER ALT CLC HRB OLG REC RNG TBR WLD WRA
10230	- MICHAEL KAROLY ALT CLC TBR WRA	2980	- DENISE KELLER ALT CLC
7092	- WANDA KASINGEN-SCOTT ALT CLC ECN GEN OLG RNG TBR VIS WRA	3941	- DENISE KELLER CLC HRB TBR
5501	- EVELYNKASMIRE ALT CLC TBR WRA	7663	- JOHN KELLER CLC OLG TBR WRA
7331	- KARA KASSAY ALT CLC HRB OLG TBR WLD WRA	20500	- JULIANN M KELLER TRL
4123	- STEVE & BILLIE KASTEN FSH REC TRL WIN WRA	20001	- KATHLEEN L KELLER GEN
1654	- TRACY KATELMAN CLC	5711	- GORDON R KELLER, PE AIR CLC DRT H20 HST LND OLG RNG TBR VIS WLD WRA
3681	- DONNA KATICH CLC H20 HRB TBR TRL VIS	8592	- SCOTT KELLERMAN, M D ALT CLC
3865	- JOSE & DONNA KATICH ALT CLC ECN H20 HRB OLG REC TBR WLD WRA	6230	- CAROL KELLERMANN ALT CLC HRB OLG REC RNG TBR WLD WRA
5975	- RICHARDA KATZ ALT CLC HRB OLG REC RNG TBR WLD WRA	10819	- L C KELLERMYER ALT ECN REC
1906	- BUD KAUFMAN ECN TBR	2850	- ALBERT J KELLEY CLC ECN OLG RDS REC RNG TBR
1908	- KURTKAUFMAN ECNTBR	7109	- CHARLOTTE KELLEY ALT CLC ECN OLG REC RNG TBR VIS WRA
6598	- LESLIE KAUK ALT CLC REC WRA	836	- MIKE KELLEY TBR
4554	- DR ROBERT KAUTEN CLC ECN FLE HRB TBR WLD	9008	- CHARLOTTE KELLIGREW ALT CLC HRB OLG REC RNG TBR WLD WRA
4965	- CHARLES KAVA CLC	4850	- JENNIFER KELLOGG ALT CLC HRB OLG TBR VIS WLD WRA
7690	- COLLEEN KAVANAUGH ALT CLC TBR TRL WRA	5143	- JENNIFER KELLOGG ALT CLC HRB OLG REC RNG TBR WLD WRA
2150	- LYNNEKAY CLC	6090	- CLAUDIA Y KELLY ALT CLC ECN OLG RNG TBR VIS WRA
9335	- KATHERINE KAYE CLC REC TBR VIS	3769	- ELEANOR KELLY ALT CLC HRB OLG REC RNG TBR WLD WRA
5	- RICHARD KAYE ALT CLC ECN GEN RDS TBR	11374	- JAMES R. KELLY
7967	- MANLYS KAYS ALT CLC TBR WRA	5476	- KATHY KELLY ALT CLC ECN OLG RNG TBR VIS WRA
5802	- TOM KAYS ALT CLC ECN OLG RNG TBR VIS WRA	777	- PATRICK & PATRICIA KELLY ECN TBR
6853	- DONNA KAYSER CLC TBR	1785	- SARAH KELLY CLC
4446	- GARRY KEAN ALT CLC ECN TBR	1785	- PEGGY J & JOSEPH KELLY CLC
7772	- FREDRICK KEARNEY ECN TBR VIS	9172	- TRACIE KELLY ALT CLC ECN OLG RNG TBR VIS WRA
e420	- MINERVA KEARNEY DRT ECN FLE REC TBR VIS	5051	- RENA KEMP ALT CLC ECN OLG RNG TBR VIS WRA
10704	- STEVEN T KEARNEY ALT CLC TBR WRA	6975	- CAROL KEMPLAN ALT CLC HRB OLG REC RNG TBR WLD WRA
1544	- JOHNS KEATING CLC HRB OWL REC WLD	2854	- CAROL KEMPLIN ALT CLC TBR
2095	- VIRGINIA KEATING CLC HRB	6033	- VIVIAN KEMPS ALT CLC ECN OLG RNG TBR VIS WRA
2020	- JAKE KECK ALT ECN GEN	10613	- AARON KUY KENDALL CLC H20 HRB REC TBR VIS
3126	- STEVEN KECK ALT ECN GEN	10297	- M.S. KENDALL ALT CLC TBR WRA
141	- HILDA KEEFER ALT CLC HRB OLG TBR	2105	- FRANK KENEDY TBR
2718	- HILDA KEEFER ALT CLC HRB OLG RDS RNG TBR WLD WRA	5430	- ROBERT KENMON ALT CLC ECN H20 OLG RNG TBR VIS WRA
11588	- HILDA KEEFER ALT GEN H20 REC RNG TRL	9224	- ANNE KENNEDY CLC HRB REC
6957	- ED & KAREN KEEGAN ALTCLCHRBOLG REC RNG TBR WLD WRA	1309	- JAMES KENNEDY ALT CLC ECN HRB OLG REC TBR VIS WLD
9028	- KAREN KEEGAN ALT CLC HRB OLG REC RNG TBR WLD WRA	6552	- JANE I. KENNEDY CLC VIS
9669	- JOHN KEELER ALT CLC TBR WRA	5765	- JENNIFER A KENNEDY ALT CLC HRB OLG REC RNG TBR WLD WRA
9961	- RON KEELING CLC GEN HRB TBR	7303	- JOHN KENNEDY ALT CLC HRB OLG REC RNG TBR WLD WRA
7353	- ADAM KEENE CLC OLG TBR TRL WRA	307	- MRS R KENNEDY GEN
1363	- MIKE KEESEE & MIGNON MARKS ALT CLC ECN GEN HRB OLG RDS REC RNG TBR VIS WLD WRA	5828	- RANDY KENNEDY ALT CLC HRB OLG REC RNG TBR WLD WRA
5746	- KENNETH KEFFER CLC TBR	2681	- JOHN P KENNELLY, ATT-AT-LAW DRT ECN REC TBR WRA
9985	- LESLIE KEILAKOW ALT CLC TBR WRA	3946	- BARRON KENNETT CLC HRB
11393	- CATHERINE C KEIM CLC DRT HRB RNG TBR VIS WRA	2676	- MELISSA KENNEY CLC REC TBR
5517	- CH KEIS ALT CLC TBR WRA	7168	- MARK KENT ALT CLC TBR WRA
1999	- NONA LEE KEISELT ALT ECN GEN	1068	- ROBERTKENYON CLC
3879	- CAROLE KEITH ALT CLC GEN LND RNG TBR WRA	3527	- ROBERTKENYON CLC
5083	- ROBERT M KELAGHAN ALT CLC ECN OLG RNG TBR VIS WRA		
8614	- ROBERT M KELAGHAN CLC		
7730	- PAUL M KELL ALT CLC HRB OLG REC RNG TBR WLD WRA		

11551	- TANJA KEOGH. ECN RNG WLD	1353	- CATHERINE KIELHOUN ALT CLC TBR
10231	- MARY E KERBER' ALT CLC TBR WRA	3150	- CHARLES KIELS. CLC HRB
10242	- VICKI KERESZTURG ALT CLC TBR WRA	6548	- JEFF KIENDEAT. ALT CLC ECN HRB OLG REC
3724	- EVELYN KERIN ALT CLC HRB LND OLG RNG		RNG TBR WLD WRA
3723	- MIKE KERIN ALT CLC HRB LND OLG TBR	6146	- ELAINE KIHARA ALT CLC TBR WRA
	WLD WRA	3500	- CHARLES A KIHTER CLC TBR
5658	- KALA KERKE' ALT CLC ECN OLG RNG TBR	6852	- GEORGE M KIILI CLC TBR
	VIS WRA	5835	- CINDY KILE. ALT CLC HRB OLG REC RNG
3749	- FRED KERKRIECK CLC OLG TBR WRA		TBR WLD WRA
4215	- SERENE KERKSIECK' DRT TBR	2613	- RONALD KILGORE ECN TBR
637	- GARYR KERNTBR	815	- BARBARA KILLEEN' ECN TBR
9858	- SONORA D KERN. ALT CLC ECN OLG RNG	1481	- STEVE KILLGORE ECN TBR
	TBR VIS WLD WRA	9007	MICHAEL KILLGREW ALT CLC HRB OLG REC
10558	JENNIFER KERNEY CLC GEN HRB TBR		RNG TBR WLD WRA
10566	MICHELLE KERO CLC GEN HRB TBR	4431	- G W KILLIAN OWL TBR WRA
5234	MICHELLE KEROX ALT CLC HRB OLG REC	30	- CHARLOITE KILLIGREW ALT CLC HRB RDS
	RNG TBR WLD WRA		RNG TBR
1346	MURIEL & DAVID KERR CLC GEN HRB TBR	10871	- MIKE KILLIGREW CLC TBR
	WRA	27	- THEO KILLIGREW CLC
1346	FORREST KERR CLC GEN HRB TBR WRA	5817	- THEO KILLIGREW ALT CLC HRB OLG REC
6241	RICHARD KERR' ALT CLC ECN OLG RNG TBR		RNG TBR WLD WRA
	VIS WRA	26	- ZA KILLIGREW RDSTBR
180	MR & MRS KENNETH D KERRI. FSH H20 TBR	10887	- ZA KILLIGREW. CLC TBR
	WRA	5098	- ROGER R KIMBER ALT CLC ECN OLG RNG
4890	SEAN KERRIGAN ALT CLC HRB OLG REC		TBR VIS WRA
	RNG TBR WLD WRA	3173	- DAVID KIMMEL ALT CLC HRB OLG TBR WLD
2363	- ROBERT KERRY ECN TBR		WRA
2096	- STEVE V KERSTNER. OWL TBR	12231	- DAVID KIMMEL CLC OLG TBR WRA
10706	- KEN KERTELL. ALT CLC TBR WRA	1W7	- SAVITRI KIMMLE CLC TBR
9852	KEITH KESEL' ALT CLC ECN OLG RNG TBR	5811	- RANDY KIMONS ALT CLC ECN OLG RNG TBR
	VIS WRA		VIS WRA
10427	- DAVID L KESSLER, D.O.. CLC HRB WRA	8490	- MR & MRS JAMES KINCAIDE RNG
9717	- WALTER KESSLER, III' ALT CLC ECN OLG	5417	- MARK & DEBBIE KINCHELOE. CLC H20 HRB
	RNG TBR VIS WRA		REC TBR VIS
7748	- DENNIS KESSURING ALT CLC HRB OLG REC	1811	- STANLEY KINDER GEN TBR
	RNG TBR WLD WRA	3349	- JOAN KINDIG CLC HRB WRA
6005	- KATHY KESTER ALT CLC ECN OLG RNG TBR	3090	- DWAIN KINDRICK. ALT ECN GEN
	VIS WRA	9057	- MORRY KINDROD, ALT CLC HRB OLG REC
8366	- DAVIS W. KETALAN ALT CLC HRB OLG TBR		RNG TBR WLD WRA
	WLD WRA	11480	- KENNETHG KINENS' TBR
8367	- STEVE KETELIAM ALT CLC HRB OLG TBR	1841	- ANNE KING CLC
	WLD WRA	8010	- BRYAN J KING CLC ECN HRB REC TBR
5552	- DAN KETHY ALT CLC HRB OLG REC RNG	3260	- CHUCKKING TBR
	TBR WLD WRA	9872	- DAWN L KING, ALT CLC HRB OLG TBR WLD
11156	- KATHI KEVILLE. CLC HRB		WRA
11250	- KATHY KEVILLE HRB	5283	- DIANA KING' ALT CLC HRB OLG REC RNG
3389	- ELI KEYES ALT CLC HRB OLG REC RNG TBR		TBR WLD WRA
	WLD WRA	2223	- DIETER KING: CLC HRB REC TBR VIS WSR
1358	- KEYURAN' CLC	6854	- GWEN KING ALT CLC ECN HRB OLG REC
8197	- BISHAR KHALAR ALT CLC HRB OLG TBR WLD		RNG TBR WLD WRA
	WRA	4273	- JAMES KING CLC TBR
8348	- BISHAR KHALAR ALT CLC HRB OLG TBR WLD	5479	- JODI KING. ALT CLC ECN OLG RNG TBR VIS
	WRA		WRA
508	- DIDAR KHALSA CLC	7998	- K.C KING ALT CLC HRB OLG REC RNG TBR
5540	- KAREN KHAMASKIA ALT CLC TBR WRA		WLD WRA
4253	- RIZVAN KHAN. TBR	2093	- KATHERINE C KING' CLC ECN HRB TBR VIS
3138	- RIZWAN KHAN. CLC		WRA
6148	- DAVID KHIKANER' ALT CLC TBR WRA	9468	- KATHRYN N KING ALT CLC ECN OLG RNG
9239	- BILL KIBLER & JUDY BUTLER. ALT CLC HRB		TBR VIS WRA
	OLG TBR WLD WRA	9379	- LARRY G KING ALT CLC TBR WRA
7325	- DAN L KICHELENGS ALT CLC HRB OLG TBR	5528	- MARY KING' ALT CLC TBR WRA
	WLD WRA	3989	- MURIEL KING ALT CLC HRB OLG TBR WLD
5500	- R J KIDD. ALT CLC TBR WRA		WRA
7506	- LISA KIDMOJE ALT CLC HRB OLG REC RNG	9893	- R D & SUSAN C KING ALT CLC ECN H20
	TBR WLD WRA		HRB LND OLG PLN REC SIA TBR TRL VIS WRA
8426	- BRYAN V KIEFER CLC HRB TBR	601	- REDDING KING ALT CLC HRB RNG TBR VIS
7424	- CATHERINE KIELHORN ALT CLC HRB OLG		WRA
	REC RNG TBR WLD WRA		

9833	- ROSE KING ALT CLC TBR WRA	8594	- STEVE KLUGE ALT FSH GEN TBR WLD
5325	- TERESA KING ALT CLC HRB OLG REC RNG TBR WLD WRA	9493	- A KLUMBACH ALTCLCTBRWRA
9362	- TERRIE KING ALT CLC HRB OLG REC RNG TBR WLD WRA	2092	- KATHLEEN L KMAR CLC ECN HRB TBR VIS WRA
1028	- KATHERINE KINGHAM ALT CLC GEN HRB WRA	8827	- ERNEST J KNAPIC HRB OLG TBR
7220	- PATRICIA M KINGMAN ALT CLC HRB OLG REC RNG TBR WLD WRA	9808	- ERIC E KNAPP ALT CLC TBR WRA
4327	- HEIDE KINGSBURY ALT CLC TBR	3332	- ERICA KNAPP CLC
11325	- HEIDE A KINGSBURY CLCTBR	9631	- TAMARAH KNAPP TBR
11734	- HEIDI KINGSBURY CLC TBR	523	- KEVIN KNEEDLER RDS TBR
5539	- DAWN KINLE ALT CLC TBR WRA	522	- PETER E. KNEEDLER WRA
8060	- KATHLEEN L KINNEY ALT CLC TBR WRA	11027	- HEATHER KNEIP ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
9164	- R D KIOUSNER ALT CLC ECN OLG RNG TBR VIS WRA	7169	- ROBERT KNODERER ALT CLC TBR WRA
1812	- GEORGE KIPPER TBR	2380	- EUGENE R KNOKEY, VICE-PRES ECN REC TBR
1271	- JOHN KIPPING CLC ECN GEN	1309	- LES KNOLL ALT CLC ECN HRB OLG REC TBR VIS WLD
798	- SHAWN D KIRBY GEN OWLTBR	1309	- LINDA KNOLL ALT CLC ECN HRB OLG REC TBR VIS WLD
2431	- MANDY KIRCH ECN TBR WLD	8432	- MANUELA KNOLL ALT CLC HRB OLG REC RNG TBR WLD WRA
8325	- BRIGITTE KIRSTENGE ALT CLC HRB OLG REC RNG TBR WLD WRA	5775	- JOSEPH KNOLLOCK ALT CLC ECN OLG RNG TBR VIS WRA
8489	- BRUCE KIRK CLC ECN	8151	- CHERYL DENISE KNOTT ALT CLC HRB OLG REC RNG TBR WLD WRA
1553	- DEBBIE KIRK ECN TBR	1025	- ROBIN KNOWLES CLC HRB
1554	- GARY KIRK ECN TBR	3781	- ROBIN KNOWLES ALT CLC GEN HRB OLG REC RNG TBR WLD WRA
8351	- JEFF & JULIE KIRK CLC H2O HRB REC TBR VIS	4743	- DOUGLAS KNOWLTON REC
7808	- NATALIE M KIRMURA ALT CLC TBR WRA	6193	- CHARLEY KNOX ALT CLC HRB OLG REC RNG TBR WLD WRA
10694	- MARY KIRZANOSKY ALT CLC ECN HRB OLG RNG TBR VIS WRA	6336	- JOHN KNOX ALT CLC HRB OLG REG RNG TBR WLD WRA
5249	- JOSH KISSLER ALT CLC HRB OLG REC RNG TBR WLD WRA	4113	- MARLENE KNOX ALT CLC HRB OLG REC RNG TBR WLD WRA
3469	- RUTH E. KITCHEN ALT CLC HRB OLG TBR WLD WRA	1357	- MARY KNOX CLC REC VIS
11053	- SANDRA KITTERMAN ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	1360	- SHER KNOX CLC TBR
3300	- ALAN KLAHN ALT CLC TBR WRA	1576	- WILLIAM R KNUDSON ECN TBR
10648	- ALLEN KLAHN CLC H2O HRB REC TBR VIS	9695	- GINNY KNUTH ALT CLC TBR WRA
9770	- ALLEN KLAHN ALT CLC TBR WRA	7298	- GHASSAN KOBOISSY ALT CLC TBR WRA
2519	- CHARLES L KLAIBER ALT CLC	9111	- LAURA KOCH ALT CLC ECN OLG RNG TBR VIS WRA
4901	- JENNY KLANER ALT CLC ECN OLG RNG TBR VIS WRA	5116	- NANCY KOCH ALT CLC HRB OLG REC RNG TBR WLD WRA
7843	- KIRT KLARD ALT CLC TBR WRA	10466	- ROBERTA KOEHLER ALT CLC TBR WRA
8213	- PETER KLAURNNESS CLC ECN OLG	11201	- SCOTT KOEHLER ECN H2O LND TBR VIS WRA
3150	- SOPHIA KLEFTAGIANNE CLC HRB	3291	- RICHARD & DOROTHY KOENIG CLC
4687	- GLORIA KLEI ALT CLC TBR WRA	8883	- HELEN & BURRELL KOEPKE CLC H2O HRB REC TBR VIS
11524	- BOB KLEIN HRB TBR	2203	- EUGENE B. KOESTER ECN
4083	- MRS ROBERT KLEIN CLC ECN H2O HRB RNG TBR WRA	6091	- MICHAEL KOHANE ALT CLC ECN OLG RNG TBR VIS WRA
1313	- JAN KLEMENT ALT ECN LND REC RNG TBR TRL VIS	2311	- PETER G KOHLER, PRESIDENT ALT ECN GEN
5416	- KEVIN KLEMPER ALT CLC H2O HRB OLG REC TBR WLD	6850	- KATRI KOKITON CLC HRB RDS TBR
5404	- WILLIAM & MAUREEN KLEPPE CLC H2O HRB REC TBR VIS	4531	- SUZANN H KOLICHE ALT CLC DRT ECN OLG RNG TBR VIS WRA
2410	- JAMES B KLESS CLC	4600	- MARYANN KOLLENBERG ALT CLC ECN HRB OLG PLN TBR TRL WSR
9879	- KATHLEEN KLIESE CLC TBR	11036	- KARIN KOLNES ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
1309	- KEITH F KLIMP ALT CLC ECN HRB OLG REC TBR VIS WLD	6802	- LYNN KOLSTAD AIR CLC ECN REC TBR VIS WRA
600	- RICHARD M KLINE ECN GEN TBR	10958	- SUSAN KOMAROMI ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
9204	- EDWIN L KLINGELHOFER CLC ECN HRB REC	7311	- SARA KONAL ALT CLC ECN OLG RNG TBR VIS WRA
9109	- LISA D KLOFKORN ALT CLC ECN OLG RNG TBR VIS WRA		
3338	- ALICE KLORER ALT CLC HRB OLG TBR WLD WRA		
7999	- ROBERT L KLOSS ALT CLC HRB OLG REC RNG TBR WLD WRA		
4867	- GRETCHEN KLUGE ALT CLC HRB OLG REC RNG TBR WLD WRA		

8784	- THOMAS W. KONEY ALT CLC ECN OLG RNG TER VIS WRA	9151	- TIMOTHY KRETZMANN ALT CLC ECN HRE OLG REC RNG TER VIS WLD WRA
8783	- ERNEST KONEY-LI' ALT CLC ECN OLG RNG TBR VIS WRA	11898	- DON M KRIEGER CLC HRE
9114	- JENNIFER KONEY-LI ALT CLC ECN OLG RNG TBR VIS WRA	2344	- MICHAEL KRIKORIAN ALT FSH OLG RDS REC TER
7542	- GINGER KONVAUN ALT CLC ECN OLG RDS RING TER VIS WRA	521	- WILLIAM E KRISOFF, M D CLC TER
1310	- MILDREDE KOON. ALT CLC HRE RDS RING WLD	7981	- BIRGITTA KRISTERSEN. ALT CLC HRB OLG REC RING TBR WLD WRA
6854	- JUDITH W KOPCZYCKA ALT CLC ECN HRE OLG REC RING TER WLD WRA	4864	- ANDREW KRITSCHER ALT CLC ECN OLG RING TER VIS WRA
9202	- DAVE KOPP ECN TER	6759	- KATHLEEN KROES ALT CLC HRE OLG REC RING TER WLD WRA
3512	- BECKY HIGGS KORN CLC OLG TER WRA	10062	- JAY KROG ALT CLC ECN OLG RING TBR VIS WRA
3511	- DENIS KORN CLC OLG TBR WRA	460	- MARY KROLICK CLC WLD
1009	- TERAH KORN CLC	210	- CHRISTOPHER KROLL. CLC
3513	- TERAH KORN. CLC OLG TER WRA	6362	- STILL KROMANN ALT CLC HRB OLG REC RING TER WLD WRA
20500	- MERRIE H KORNLELITTH TRL	8822	- FRED KROPF. ECN TER
2078	- KORV RADIO 1340 VERNON H UECKER. ECN FLE TBR	2542	- PAULA H KROTSETER WRA
9080	- GLEN KOSA ALT CLC HRE OLG TER WLD WRA	9756	- JEFF KRUEGER ALT CLC TER WRA
3500	- L D KOSECT CLC TER	9632	- JENNIFER KRUMEOLTZ TER
5477	- STEVE KOTHE ALT CLC ECN OLG RING TER VIS WRA	5110	- GINA KRUMMEL' ALT CLC HRE OLG REC RING TER WLD WRA
3047	- JEFFREY KOTLER TBR	641	- ROBERT E KRUSE ECN TBR WRA
3500	- WILLIAM KOTUR CLC TER	2036	- TED KRUSE ALT ECN GEN
5848	- JACINE KOUGOTE. ALT CLC HRE OLG REC RING TER WLD WRA	8849	- CHRISTINE M KUDJA CLC TER
6055	- JAN KOVACH ALT CLC HRE OLG REC RING TBR WLD WRA	2034	- KIMBERLY KUIKHOVEN ALT ECN GEN
8341	- MONDM KOWAL' ALT CLC ECN OLG RING TER VIS WRA	8377	- LUAY KULHARY ALT CLC HRB OLG REC RING TER WLD WRA
5567	- SARA KOWAL ALT CLC ECN OLG RING TER VIS WRA	4208	- SHERI KULICKA ALT CLC HRE WRA
8601	- COLUN & SAM KOWEELL. ALT CLC H20 HRE OLG OWL RDS RING TER TRL WLD WRA	1211	- JEFF KUNDERT ALT CLC TER
7114	- SONG KOWEELL ALT CLC ECN OLG REC RING TER VIS WRA	608	- RALPH KUNIN ALT REC TER WRA
9025	- MARY KOWN ALT CLC HRE OLG REC RING TBR WLD WRA	8796	- JOYCE KUNSMAN. ALT CLC ECN OLG RING TER VIS WRA
4305	- JANICE KOWNACW CLC OLG	10284	- DAVID KUPFER' ALT CLC REC TER WRA
5376	- KENNETH GEORGE KOWOTO ALT CLC ECN OLG RING TBR VIS WRA	485	- EVA KURTH, PH D : CLC ECN HRE REC TER VIS WLD WRA
11233	- JOHN KOZIAR. CLC FSH HRE	2969	- ELAINE KURTOVICH' ALT CLC HRB OLG TER WLD WRA
1855	- DIANE D. KRAGE. CLC TBR	7447	- GEROLYN KURTZ' ALT CLC HRE OLG REC RING TER WLD WRA
8431	- GARY KRAGHT' CLC GEN RDS TER	9711	- L V KUYEENDALL' ALT CLC ECN OLG RING TBR VIS WRA
3283	- JASON KRALOVIC. CLC TBR	10207	- DOROTHEA KWKENDALL. ALT CLC ECN OLG RING TER VIS WRA
9754	- KRISTEN KRAMEICH ALT CLC TER WRA	2727	- KAREN KWONG. TER
2255	- ERIC KRAMER. ALT CLC HRE OLG TER WLD WRA	2723	- LYNDA KWONG. ALT CLC
1026	- BRUCE KRANZLER. OLG	3958	- PHIL LA EAREERA ALT CLC HRE OLG TER WLD WRA
9750	- TIMOTHY KRASUDUSW ALT CLC TER WRA	9088	- A J LAARSDAM ALT CLC TER WRA
1657	- SIBELLA KRAUS CLC RDS	10105	- TAMI LABASS ALT CLC ECN OLG RING TER VIS WRA
7571	- EVELYN KRAUSE ALT CLC ECN OLG RING TBR VIS WRA	6238	- LOUISE LAELLE ALT CLC ECN OLG RING TER VIS WRA
4748	- LINDA KRAUSS CLC	2471	- HARRIET LAERGE ALT ECN GEN
4357	- BEN KREBS. ALT CLC HRE OLG TER WLD WRA	1109	- DORA LABOUNTY. ECN TER
6012	- KEITH KREITTER. ALT CLC ECN OLG RING TER VIS WRA	1237	- J LABOUNTY, GEN TBR
2817	- J KREITZER' CLC	2193	- DOUGLAS LACAYO. CLC FLE
4025	- JEFF KREMPLE. ALT CLC HRB OLG REC RING TER WLD WRA	3061	- LARRY LACEY. GEN
4026	- LINDSAY KREMPLE ALT CLC HRE OLG REC RING TBR WLD WRA	3113	- MAUDIE LACEY ALT ECN GEN
8657	- MARY KRETZMANN' CLC ECN REC VIS	1308	- CYNTHIA & DUANE LACH ALT CLC ECN HRB OLG REC TER VIS WLD
9150	- MARY KREIZMANN ALT CLC HRE OLG REC RING TER WLD WRA	8308	- MICHELLE J LACHOVIC ALT CLC HRE OLG REC RING TER WLD WRA
		2846	- LIZA LADUE ALT CLC HRB OLG TER WLD WRA

2295	- ALICIA LAFEVER TRL	8916	- NORMA LANE ALT CLC HRB OLG REC RNG
2492	- SHARON LAFFERTY CLC HRB RDS REC TBR WLD		TBR WLD WRA
367	- NORMAN LAFORCE CLC ECN HRB RNG TBR	9993	- NANETTE S LANEY ALT CLC TBR WRA
6816	- CECILE G LAFORGE CLC TBR	8997	- CINDY LANG CLC ECN OLG REC TBR
7809	- KRISTINE J LAGEOLER ALT CLC TBR WRA	10804	- CORNELIA LANG ALT CLC ECN OLG RNG TBR VS WRA
10256	- MARK E LAGERWEY ALT CLC TBR WRA	3608	- DENNIS R LANG TBR
6863	- E O LAINE ALTCLC	3500	- JANET LANG CLC TBR
9124	- MICHAELLAINE ALT CLC HRS OLG REC RNG TBR WLD WRA	7272	- JANET E LANG ALT CLC TBR WRA
11546	- G L LAIRD	12135	- AURELIE LANGEFORT CLC FSH OLG
9593	- GLORIA LAIRD CLC HRB WRA	8096	- JAMES LANGFORD ALT CLC HRB OLG REC RNG TBR WLD WRA
10331	- W J LAIRD ALT CLC ECN OLG RNG TBR VIS WRA	652	- ROY LANGFORD ALT TBR
6239	- YOLANDE LAJOIE ALT CLC ECN OLG RNG TBR VIS WRA	6855	- JONNI SOBASHIA LANISDEN ALT CLC H2O REC TBR WLD
3265	- WILLIAM LAJOYER CLC FLE OLG RDS REC TBR VIS	7158	- CHRISTINE LANNY ALT CLC TBR WRA
2312	- LAKWOOD FOREST PROD FRED MOLTER ECN TBR	8659	- HELMUT LANO CLC HRB TBR
2544	- LAKWOOD FOREST PROD FRED MOLTER TBR	4136	- LOWELL LANORIE ALT CLC ECN HRB OLG TBR WLD WRA
4871	- KARRI LAKEY ALT CLC HRB OLG REC RNG TBR WLD WRA	3572	- FRANK LANSER ALT CLC HRB OLG RDS TBR
7395	- AMAY LAKOFF CLC OLG TBR WRA	3727	- PATTY LANSER ALT CLC HRB OLG TSR WLD WRA
8816	- DONNER & THELMA F LALSE & MEISS CLC REC	3500	- STEPHEN LANSER CLC TBR
8972	- DONNA LAM CLC OLG TBR	4673	- MARIE LANSEY ALT CLC TBR WRA
2637	- LYNN LAM CLC	10159	- BRIAN LANSLEY CLC REC
1161	- JUDITH LAMARE, PH D CLC H2O WRA	9674	- TONY L LANTZER ALT CLC TBR WRA
1971	- JAMES V LAMB TBR	11056	- SCOTT A LAPE ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
5105	- JASAN LAMB ALT CLC HRB OLG REC RNG TBR WLD WRA	8006	- LEE LAPERLE ALT CLC ECN OLG RNG TBR VIS WRA
159	- GAYNA LAMB-BANG CLC RDS TBR WRA	8005	- THERESA LAPERLE ALT CLC ECN OLG RNG TBR VS WRA
6287	- ELLEN LAMBERT ALT CLC TBR WRA	7170	- LESLIE LAPP ALT CLC TBR WRA
5223	- STEPHANIE LAMBERT ALT CLC HRB OLG REC RNG TBR WLD WRA	7047	- ANGELA LAPPES ALT CLC TBR WRA
219	- STEVEN A LAMBROS, M D CLC HRB RDS RNG TBR	3539	- MARGY LARA ALT CLC HRB OLG TBR WLD WRA
9040	- SUSAN LAMELA ALT CLC HRB OLG REC RNG TBR WLD WRA	9220	- JON & KELLY LARDNER CLC H2O HRB REC TBR VS
1846	- SUSAN E LAMELA CLC FLE HRB OLG RDS REC RNG TBR TRL URB VIS WIN WRA	2332	- MRS SOLVEIG R LARDNER TBR WRA
9366	- BRUCE LAMPIKEN ALT CLC OLG TBR	1645	- JOHN LARGE CLC RDS WRA
11001	- TOM LAMPKIN ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	4558	- MR & MRS LARIMER CLC HRB TBR
5375	- PEGGY LAMPSON ALT CLC ECN OLG RNG TBR VIS WRA	8831	- MR & MRS NW LARIMER CLC TBR
11740	- LARRY LANCASTER TBR	3479	- RICHARD LARKIN ECN OWL REC
1851	- MYLES H LANCASTER GEN LND OWL TBR TRL WLD WRA	8173	- KRYSIA LARMONE ALT CLC HRB OLG REC RNG TBR WLD WRA
7323	- EVE LANCE ALT CLC TBR WRA	150	- WILLIAM LARSEN CLC GEN HRB RNG TBR WRA
9568	- G L LAND CLC HRB WRA	7308	- WILLIAM LARSEN ALT CLC HRB OLG REC RNG TBR WLD WRA
5253	- ROSE & JESUS LAND ALT CLC HRB OLG REC RNG TBR WLD WRA	4931	- BEWA LARSON ALT CLC HRB OLG REC RNG TBR WLD WRA
4238	- JEANETTE LANDA RNG	4932	- CARL LARSON ALT CLC HRS OLG REC RNG TBR WLD WRA
4239	- LARRY LANDA RNG	9058	- CINDY LARSON ALT CLC HRB OLG REC RNG TBR WLD WRA
2533	- WAYNE T LANDERS CLC ECN OLG TBR WRA	617	- SCOTT LARSON TBR
4044	- MAGGIE LANDON CLC FSH HRB TBR	1581	- WAUXIE LARSON CLC HRB OLG OWL TSR TRL WLD WRA
3560	- LOWELL LANDRIE ALT CLC HRB RDS	7994	- JIM LARTO ALT CLC HRB OLG REC RNG TBR WLD WRA
4306	- LOWELL LANDRIE CLC OLG TBR WRA	3150	- LEONARD LARVE CLC HRB
227	- LANDS OF SIERRA, INC CHARLES F STEINER ALT REC WIN	11047	- COURTNEY J LASEY ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
1046	- CAROLLANE CLC TBR WRA	1098	- PHYLLIS LASHER ALT CLC
20019	- CECILIA LANE GEN REC TBR TRL	1336	- RICHARD LASHER ALT TBR
8045	- MARY LOU LANE ALT CLC ECN OLG RNG TBR VIS WRA	8909	- DEVISTRE LASHGARI ALT CLC HRB OLG REC RNG TBR WLD WRA

5522	- NATE LASK: ALT CLC TBR WRA	6851	- USA LAY TBR
10476	- PAM LASSITER. ALT CLC TBR WRA	9211	- SCOTT LAY. CLC WRA
1516	- BILL LASTER GEN TBR	12226	- SCOTT LAY CLC
1522	- VICKIE LASTER ECN TBR	7537	- YANN LAYER ALT CLC HRB OLG REC RNG TBR WLD WRA
6263	- PATRICIA LATHAM ALT CLC TBR WRA	3574	- LISE LAZELL ALT CLC ECN OLG RNG TBR VIS WRA
8328	- LEONDARD LATHERR ALT CLC HRB OLG REC RNG TBR WLD WRA	2099	- CARRIE LAZIER ECN FSH RDS REC TBR TRL VIS WIN
6660	- TONI LATHROP ALT CLC ECN OLG RNG TBR VIS WRA	1590	- CATHIE LAZIER CLC HRB OLG REC TBR WLD WRA
20513	- REBECCA LATIMER CLC HRB	1863	- STEFFANI LAZIER CLC H2O HRB OLG TBR WLD
9237	- MR & MRS E F LATINI CLC GEN HRB	2266	- EDWARD A LAZZARESCHI GEN TBR
11327	- MR & MRS E F LATINI CLC ECN HRB RDS RNG TBR WLD	2577	- JERRY LEACH CLC H2O RDS REC WLD
1347	- SUZANNE LATTI CLC FLE GEN HRB	1780	- TOM LEALOS ECN GEN LND TBR WRA
10812	- MARTIN LAUBER CLC REC WLD	6395	- WARREN LEAMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
11751	- MARTIN LAUBER CLC REC TBR	10163	- LUPE LEAN ALT CLC
4090	- CHARLES LAUER ECN	8003	- DEBRA LEARN ALT CLC ECN OLG RNG TBR VIS WRA
8652	- CHARLES & BEVERLY LAUER CLC HRB	6487	- MICHAEL LEASEN CLC HRB TBR
5956	- MARTINA LAUER ALT CLC HRB OLG REC RNG TBR WLD WRA	6466	- SHIRLEY M LEATHLEY ALT CLC ECN OLG RNG TBR VIS WRA
6723	- MR & MRS CHARLIE LAUER' RNG	10747	- CHARLES LEAVITT ALT CLC TBR WRA
5361	- TERRY M LAUGHLIN ALT CLC ECN OLG RNG TBR VIS WRA	7172	- MADELINE LEAVITT. ALT CLC TBR WRA
7106	- TONY LAURA' ALT CLC ECN OLG RNG TBR VIS WRA	8603	- STEPHEN W. LEBBERT: CLC HRB TBR WRA
9825	- GORDON LAURANCE CLC OLG TBR WRA	11652	- STEPHEN W LEBBERT ALT CLC ECN HRB TBR
10263	- NATHAN LAUREN ALT CLC ECN TBR WRA	5917	- BARBARA LEBLANC ALT CLC ECN OLG RNG TBR VIS WRA
4571	- CHRISTINE LAURIA CLC REC	7045	- BARBARA LEBLANC ALT CLC TBR WRA
5088	- LAWREN L LAURIA. ALT CLC ECN OLG RNG TBR VIS WRA	8751	- BUCK LEBLANC ALT CLC ECN OLG RNG TBR VIS WRA
1954	- ANNIE LAURIE H2O HRB LND OLG REC RNG TBR VIS WLD WRA	851	- CATHY LEBLANCHEALY. CLC OLG REC TBR
1424	- JENNIFER LAUTAMO CLC HRB RDS REC TBR	3568	- VICTOR LEDBETTER CLC TBR
6164	- ROY LAUTAMO ALT CLC HRB OLG TBR	9142	- KATHERINE LEDFORD BEELEY. CLC ECN HRB OLG REC RNG VIS WIN WLD WRA
6215	- CHRIS LAUTER' ALT CLC ECN OLG RNG TBR VIS WRA	2028	- PETE LEDGER ALT ECN GEN
11044	- PETE LAVELLE. ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	351	- BARBARA LEE, CLC FLE REC TBR
11287	- SAMBHAVA LAVERMORE ALT CLC	2605	- BYRON LEE CLC
2430	- SCOTT LAW ECN GEN TBR	5428	- BYRON & CORINNE LEE. TBR
5527	- GAIL LAWDINE ALT CLC TBR WRA	2245	- CARL LEE ALT CLC HRB OLG RDS TBR TRL WLD WRA
7370	- DAVID LAW EEN. CLC OLG TBR WRA	7358	- CHARLOTTE LEE CLC OLG TBR WRA
1881	- ANN H LAWHEAD. CLC TBR	8467	- CHRISTINA LEE CLC HRB LND WRA
1447	- DAVID LAWLER HST LND SIA	2360	- DAVID LEE CLC OLG RDS TBR
5300	- JOSHUA LAWLEY. ALT CLC HRB OLG REC RNG TBR WLD WRA	4441	- DAVID LEE CLC FLE GEN HRB REC TBR VIS WLD
2820	- A ROBERT LAWRENCE CLC FSH HRB TBR	7875	- DEBBY LEE. ALT CLC HRB OLG REC RNG TBR WLD WRA
2902	- BRENT LAWRENCE TBR	7706	- EDWIN LEE ALT CLC ECN OLG RNG TBR VIS WRA
1799	- CHRISTINE LAWRENCE CLC OLG	6128	- ELENA LEE ALT CLC TBR WRA
1296	- HEATHER LAWRENCE CLC H2O HRB OLG RDS REC RNG TBR VIS WIN WLD	6129	- FRANK LEE ALT CLC TBR WRA
5826	- OTIS LAWRENCE ALT CLC HRB OLG REC RNG TBR WLD WRA	6299	- GERALD LEE CLC OLG TBR WRA
10888	- OTIS LAWRENCE CLC	1347	- HELGE LEE CLC FLE GEN HRB
1800	- ROBERT J LAWRENCE. CLC OLG	11798	- JAMES LEE ALT CLC OLG TBR WLD WRA
2763	- AARON LAWS CLC	10772	- JAMES B LEE ALT CLC HRB OLG REC TBR WLD WRA
2451	- DORIS LAWSON AIR CLC HRB TBR	9735	- JAN LEE ALT CLC ECN OLG RNG TBR VIS WRA
11116	- DORIS LAWSON TBR WRA	5484	- JOHN LEE ALT CLC ECN OLG RNG TBR VIS WRA
11150	- DORIS M LAWSON CLC HRB	1920	- JUDY LEE ALT ECN GEN
8726	- DOUG, CHERYL & BRIAN LAWSON TBR	2251	- JUDY LEE REC
12059	- LIDA ARMSTRONG LAWSON. CLC H2O HRB RNG TBR WLD	7799	- KATHERINE L LEE CLC H2O HRB REC TBR VIS
8069	- SAMUEL B LAWSON ALT CLC TBR WRA		
6729	- SANDRA LAWSON CLC TBR		
5851	- LINDA LAY TBR		
6851	- SCOTT LAY TBR		

1924	-	MICHAEL E LEE ALT ECN GEN	6061	-	SHARON LEONG. ALT CLC HRB TRL
7829	-	MICHELE LEE ALT CLC TER WRA	1886	-	W D. LEONG. CLC
8089	-	NINA LEE ALT CLC TER WRA	1546	-	WESLEY D LEONG ALT CLC ECN WRA
5481	-	RICHARD LEE ALT CLC ECN OLG RNG TER VIS WRA	11119	-	SCOTT LEONHARDT GENTER
9076	-	SARAH LEE ALT CLC TER WRA	8231	-	ROBERT LEOS ALT CLC DRT FSH HRE OLG REC RNG TBR WLD WRA
5425	-	VICKI LEE GEN TBR VIS WRA	10052	-	CHRIS LEPPEK ALT CLC ECN OLG RNG TER VIS WRA
924	-	WAYNE C LEE ALT CLC ECN HRE RDS RNG TER WRA	7592	-	DEBORAHA LERESQUE ALT CLC ECN OLG RNG TER VIS WRA
2703	-	SHARON L LEE a DAWN D PUHR WRA	1160	-	GREGORY LEROYS GEN
5946	-	MRS W A LEE, JR ECN TER	9667	-	RICK LERUM ALT CLC TER WRA
5945	-	WILLIAM A LEE, JR ALT GEN OWL TBR	8456	-	DAVID A LESLIE ALT CLC HRE OLG REC RNG TER WLD WRA
8739	-	SUSAN LEFEVER ALT CLC HRE OLG WRA	673	-	RUTH LESLIE GEN H2O TER VIS WLD
2861	-	KAREN LEFFLER CLC ECN HRE TER VIS WRA	7877	-	THERESE LESLIE ALT CLC HRB OLG REC RNG TER WLD WRA
6605	-	KAREN LEFFLER ALT CLC ECN OLG RNG TER VIS WRA	376	-	WILLIAM LESLIE CLC DRT ECN H2O HRE RDS TER VIS WRA
3667	-	KAREN B LEFFLER CLC	4918	-	CARNEL LESSLEY ALT CLC HRB OLG REC RNG TER WLD WRA
11437	-	KAREN B LEFFLER CLC REC	0322	-	VICTORIA LESTER ALT CLC HRE OLG REC RNG TBR WLD WRA
8672	-	MYRA LEFLER CLC ECN HRB VIS WLD	89	-	ROSE LEUTY CLC
6853	-	EMMY LEFSON CLC TER	5403	-	MARGARET LEVENS CLC FLE WRA
6586	-	PHILLIS T. LEFTIN TRL VIS	3256	-	SUSAN LEVENSON ALT CLC HRE OLG REC RNG TER WLD WRA
834	-	H L LEGGITT ECN TBR	1631	-	LEE L LEVIN ECN TER WRA
1023	-	JUDITH L LEGGITT ECN TBR	4138	-	LEE LEVIN, MD ALT CLC ECN OLG REC TBR
5331	-	WESLEY LEHR ALT CLC HRE OLG REC RNG TER WLD WRA	2098	-	HOWARD & FAMILY LEVINE. CLC H2O REC TER WLD WRA
5344	-	DONNA LEIBRICK ALT CLC ECN OLG RNG TER VIS WRA	6925	-	NEIL LEVINE ALT CLC TER WRA
977	-	JEANETTE a OLAF LEIFSON CLC ECN RDS REC RNG TER	4762	-	LINDA LEVINGSTON CLC OLG TER WRA
4329	-	CARA, DAN, JANAE, JERME LEININGER REC	9655	-	TRENT LEVINTON. ALT CLC TER WRA
4433	-	ERICK LELAND GENTER	1632	-	PATRICIA LEVITAN CLC H2O HRB RDS REC RNG TER WLD WRA
4432	-	SUSAN LELAND TBR	1309	-	GEORGIANNA LEVITT. ALT CLC ECN HRE OLG REC TER VIS WLD
1622	-	JOHN E LEMAN ALT RNA RNG WRA	8500	-	NANCY DAVIS LEVITZ ALT CLC HRB OLG RDS TER WLD WRA
20017	-	STEVEN LEMAN CLC ECN RDS TRL	8398	-	WILLIAM L LEVITZ ALT CLC ECN HRE OLG TER WLD WRA
444	-	ARNOLD W LEMEERGER CLC TER TRL WRA	3550	-	N LEVY. CLC HRB OLG TER WLD
444	-	ESTHER M LEMEERGER. CLC TER TRL WRA	6853	-	STELLA LEVY CLC TER
7364	-	SAMANITA LEMEN CLC OLG TER WRA	8436	-	DAVID LEVY, RPF CLC ECN FLE GEN HRE TER
2306	-	JOYCE LEMITZ CLC RDS REC TER TRL WRA	3041	-	LESLIE LEW. CLC TER
1952	-	STEWART LEMKE ECN GEN TBR	2087	-	ROBERT LEW VIS
10849	-	BERTHA LEMOND TBR	7712	-	SHIRLEY LEWEN ALT CLC ECN OLG RNG TBR VIS WRA
10903	-	KAREN LEMOND H2O TER WLD	4265	-	A M LEWIS CLC
7070	-	MARION LEMONS ALT CLC HRB OLG REC RNG TER WLD WRA	9846	-	ADELE LEWIS CLC OLG TER WRA
5349	-	JANICE LENDICK ALT CLC ECN OLG RNG TBR VIS WRA	3144	-	ANGELA LEWIS CLC TER
6180	-	SARAH LENG ALT CLC HRE OLG REC RNG TER WLD WRA	6692	-	ARTHUR LEWIS ALT CLC ECN OLG RNG TER VIS WRA
4564	-	J LENGEL CLC TER	1195	-	BLANCHE M LEWIS CLC RDS WRA
1688	-	TERESA LENGYEL CLC H2O TER	6246	-	CHARLES LEWIS ALT CLC ECN OLG RNG TER VIS WRA
4399	-	TERESA LENGYEL. CLC GEN TBR	4908	-	CHARLES A LEWIS ALT CLC ECN OLG RNG TER VIS WRA
11379	-	TERESA LENGYEL GEN H2O TER	4581	-	CLAIRE LEWIS CLC
10097	-	VALERIE LENNELL ALT CLC ECN OLG RNG TBR VIS WRA	2659	-	COLEEN M LEWIS CLC ECN HRE TER VIS WRA
4400	-	JEANNE LENSJUIL CLC HRE RNG TER	12245	-	COLEEN M LEWIS CLC
1695	-	M A T LENYO CLC ECN HRB TER VIS WRA	2785	-	DARON LEWIS TBR
2550	-	GREG M LEO, M D ALT CLC HRE RNG	493	-	DENNIS LEWIS ECN OWL TER TRL WLD
10310	-	ELLEN LEONARD ALT CLC ECN OLG RNG TER VIS WRA	10309	-	DOUGLAS G LEWIS ALT CLC ECN OLG RNG TER VIS WRA
2697	-	JW LEONARD GEN REC TBR			
9513	-	SCOTT G LEONARD CLC GEN TER			
6070	-	CLIFFORD LEONG ALT OLG TER TRL WRA			
1793	-	ELIZABETH LEONG ALT TRL			
1888	-	LORRAINE LEONG CLC TER			
11179	-	ROBIN L LEONG ECN OLG RDS REC TBR TRL			

752	• FRED LEWIS GENTBR	432	• MARCUS UBKIND: REC RNA TBR WIN WLD WRA
10442	• IRENE LEWIS CLC H2O HRB REC TBR VIS	5021	- MARCUS UBKIND: CLC HRB REC WRA
2746	- JUUE LEWIS. CLC	9214	• NANCY LIBONATI: CLC HRB RDS TBR
706	• UNDA LEWIS. ECNTBR VIS	9948	• MARKFORD LICHA CLC GEN HRB TBR
474	• LYNNE LEWIS CLC REC RNG	1651	- BOB LICHT: CLC WSR
6025	- MIKE LEWIS ALT CLC ECN OLG RNG TBR VIS WRA	8390	- GORDAN LICKS ALT CLC HRB OLG REC RNG TBR WLD WRA
5442	• MINDIE LEWIS. CLC H2O HRB REC TBR VIS	5262	- ALICE LICHT ALT CLC ECN OLG RNG TBR VIS WRA
6245	• NORMA LEWIS ALT CLC ECN OLG RNG TBR VIS WRA	9680	• GARY LIDREN ALT CLC TBR WRA
4907	NORMA M. LEWIS ALT CLC ECN OLG RNG TBR VIS WRA	5397	- EIRA LIDS ALT CLC HRB OLG REC RNG TBR WLD WRA
10026	• PAIGE LEWIS CLC GEN HRB TBR	6790	• JEFFREY LIEB: ALT CLC HRB OLG REC RNG TBR WLD WRA
1309	- PAUL LEWIS ALT CLC ECN HRB OLG REC TBR VIS WLD	2420	- BABETTE LIGMNER CLC
1297	• S E LEWIS. TBR	9605	• KAREN LIKE. ALT CLC TBR WRA
705	- TIMOTHY LEWIS. ECN TBR VIS	7509	- PEGGY W LIKMAN. ALT CLC HRB OLG REC RNG TBR WLD WRA
10961	- MIKE LEWIS ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	1399	• LOUIS M LILE ECN
3685	• JOSEPH A LIBBEY, JR , M D REC	7242	• LARRY LILIENTHAL: ALT CLC ECN OLG RNG TBR VIS WRA
8313	• MARK LIBELS ALT CLC HRB OLG REC RNG TBR WLD WRA		

7664	- PEDER LILJEQUIST ALT CLC ECN TER WRA	8319	- GLEN LINGLETER ALT CLC HRE OLG REC RNG TBR WLD WRA
10032	- KIMBERLY LILLARD CLC GEN HRE TER	962	- AUDREY LINSON GEN TER
10527	- REWA LILLER CLC GEN HRB TER	6734	- PETER LIPER ALT CLC OLG WRA
7791	- THOMAS LILLEY ALT CLC HRE OLG TER WLD WRA	6047	- KENNARD LIPMAN ALT CLC ECN OLG RNG TBR VIS WRA
9688	- BANY LILLINGTON ALT CLC TBR WRA	1329	- LAUREL & TOM LIPPERT ALT CLC
6169	- ALAN B LILLY CLC HRB	2166	- MARK LIPSHUTZ CLC LND TER TRL
3598	- AURI LIMA ALT CLC HRE OLG REC RNG TBR WLD WRA	4606	- JOLIE LIPSIG CLC TBR
2661	- BILL LIME HRE OLG TER WLD WRA	996	- SCOT LIPSKI ECN GEN TER
5038	- SALLY LIMBOCHER ALT CLC HRB OLG REC RNG TBR WLD WRA	4942	- ANDREA LIS ALT CLC ECN OLG RNG TER VIS WRA
6057	- CHRISTINE LIMMERMAN ALT CLC HRB OLG REC RNG TER WLD WRA	7023	- JANE LISEN ALT CLC TBR WRA
392	- ANTHONY LIMMERMANS, JR VIS	4575	- SONYA LISPER ALT CLC
6931	- LEESA LINCH ALT CLC TER WRA	7560	- S M LISSEN ALT CLC ECN OLG RNG TBR VIS WRA
10517	- LEESA LINCH CLC TER	4181	- PATSY LISSER CLC
11523	- LEESA LINCH ALT CLC TBR	5989	- JEANIE LISTER ALT CLC HRB OLG REC RNG TER WLD WRA
7063	- MANO LINCOLN ALT CLC HRE OLG REC RNG TBR WLD WRA	10791	- PATRICIA LITEKY ALT CLC TBR WRA
3693	- LINCOLN CHAMBER OF COMMERCE JOHN HIRTZ ALT CLC ECN GEN TER	3384	- JUNE LITKE CLC
3661	- LINCOLN CITY COUNCIL MAYOR NELLO STEFANI ALT CLC ECN GEN TER	184	- MRS EDWARD M LITKE CLC H2O HRB OLG RDS
3391	- DANIEL LIND ALT CLC HRB OLG TER WLD WRA	3235	- EARL LITTLE TER
2857	- YANCY A LIND CLC GEN H2O HRE RDS RNG TER	11164	- GEORGIA A LITTLE CLC HRB
1785	- DENISE LINDAHL CLC	4913	- GREGORY LITTLE ALT CLC ECN OLG RNG TBR VIS WRA
2211	- LARRY, MARILYN & DAUBRY LINDAUER CLC GEN HRE OLG OWL RDS RNG TER TRL VIS WIN WLD WRA	10299	- KATHERINE LITTLE ALT CLC ECN TER WRA
3006	- DAVID & MARY LINDBERG RNG TBR TRL	6838	- MR & MRS A R LITTLE CLC
11436	- DAVID J LINDBERG CLC ECN RNG TBR TRL	500	- ROBERT LITTLE TBR
830	MR & MRS BUD LINDBOM CLC	9891	- DAVID LITTLEJOHN ALT ECN RNG TBR TRL
2606	SCOT LINDEN CLC HRE TBR	4369	- PETER LITTMAN CLC HRB OLG REC RNG TER TRL WIN WRA
2913	DANIEL LINDERHOLM ALT REC TBR TRL WLD	3406	- JENNIFER LITTON CLC ECN FAC HRB MIN PLN RNG TER VIS
1621	PETE LINDERMAN CLC RDS REC	4715	- JENNIFER LITTON CLC
4809	JACKIE LINDGREN ALT CLC HRB OLG REC RNG TBR WLD WRA	9850	- LIVING TREE CENTRE DR JESSE SCHWARTZ ALT CLC ECN OLG RNG TER VIS WRA
4812	RICHARD LINDGREN ALT CLC HRE OLG REC RNG TBR WLD WRA	5498	- CHARLES LIVINGSTON ALT CLC HRE OLG REC RNG TBR WLD WRA
4059	CARLA LINDKE CLC ECN REC TBR VIS WLD	9477	- MATT LIVINGSTON ALT CLC TER WRA
3157	- GRAM LINDLEY CLC TER	8174	- RICHARD LIVINGSTON ALT CLC HRB OLG REC RNG TBR WLD WRA
8331	- YERENIA LINDROS ALT CLC HRB OLG REC RNG TBR WLD WRA	7539	- LARRY L LNRES ALT CLC HRB OLG REC RNG TER WLD WRA
7794	- ANABEL V LINDSAY ALT CLC GEN HRE OLG TER WLD WRA	888	- DON K LLOYD ECN TER
20450	- ROBINITA LINDSAY ALT CLC ECN FSH GEN HRE LND OLG REC RNA RNG SIA TER VIS WLD WRA	2463	- MRS NELLI B LLOYD ALT ECN GEN
1738	- W H LINDSAY CLC ECN HRB TBR VIS WRA	437	- ANNIE LO CICERO CLC REC TER WRA
8437	- W H LINDSAY ALT CLC ECN OLG TBR TRL	8125	- BRUCE LOADER ALT CLC HRE OLG TER WLD WRA
6762	- WILL LINDSAY ALT CLC HRB OLG REC RNG TBR WLD WRA	506	- BILL LOCICERO ALT CLC TBR
11297	- WILL LINDSAY ECN RNG TBR	2976	- KAY LOCKE FLE H2O RDS REC TBR WLD
8389	- JENIFER LINDSLEY ALT CLC HRB OLG REC RNG TER WLD WRA	3928	- KAY LOCKE H2O REC WLD WRA
3500	- SCOTT LINDSTROM CLC TER	4466	- TERRY LOCKE CLC HRB REC TBR VIS WRA
620	- HAL LINDVALL TBR	313	- LINDA LOCKLIN ECN REC WRA
10286	- JEANNE LING ALT CLC TER WRA	7086	- STEPHEN LOCKSER ALT CLC ECN OLG REC RNG TBR VIS WRA
9189	- MICHAEL LING ALT CLC ECN OLG RNG TBR VIS WRA	5813	- DENA LOCKWOOD ALT CLC ECN OLG RNG TER VIS WRA
		3913	- MR & MRS LOCKWOOD ALT CLC HRB OLG TER WLD WRA
		6409	- HOWARD LOCKYER ALT CLC ECN OLG RNG TER VIS WRA

1953	- DAVID LOEB CLC OLG TBR	8393	- KISANARA LOOMB CLC HRB REC
4055	- E LOEBEL CLCTBR	7997	HENRY LOOMFOOT ALT CLC HRB OLG
900	- RUTH M LOEFFELBEIN ECN GEN H2O		REC RNG TBR WLD WRA
	OLG REC TBR VIS WRA	3452	CHARLES LOONEY ALT
4737	- PEGGETH LOEL CLC RNG TBR WLD WRA	3110	ALTHEA LOPEZ ALT ECN GEN
1309	- DAVID LOESCH ALT CLC CN HRB	2950	GABRIEL LOPEZ TBR
	REC HR VIS WL	6544	MARIA LOPEZ ALT CLC ECN OLG RNG
1309	- CARLA LOESCH ALT CLC ECN HRB OLG		TBR VIS WRA
	REC F SW	4822	MELVA LOPEZ ALT CLC ECN OLG RNG
5351	- A A ALT CLC ECN L RNG TBR		TBR VIS WRA
	VIS WRA	6523	SUSAN LOPEZ ALT CLC ECN OLG RNG
6672	- DONALD LOGAN ALT CLC ECN OLG RNG		TBR VIS WRA
	TBR VIS WRA	4732	ROSA LOPEZ-WILSON CLC ECN HRB OLG
9233	- GEORGE E LOGAN CLC H2O HRB REC		TBR
	TBR V.S	9168	ROSA LOPEZ-WILSON ALT CLC ECN OLG
972	- LARRY LOGAN GEN TBR		RNG TBR VIS WRA
6673	- MARSHA LOGAN ALT CLC ECN OLG RNG	11266	JOELORANG ECN
	TBR VIS WRA	3475	LEO LORANG OLG TBR
10269	- CHRIS LOGE ALT CLC FSH TBR WRA	5185	LINDA LORCE ALT CLC ECN OLG RNG
10414	- ANTONIO LOGSDON ALT CLC HRB OLG		TBR VIS WRA
	TBR WLD WRA	6351	DAVID LORD ALT CLC HRB OLG REC RNG
5513	- ALLEN LOHUNERN ALT CLC TBR WRA		TBR WLD WRA
1021	- DAVID LOLUCH ECN	10732	SARA MAE LORD ALT CLC TBR WRA
8606	- BARBARA LOMAN ALT CLC HRB OLG TBR	9012	DANIELLE LOREN ALT CLC ECN OLG RNG
	WLD WRA		TBR VIS WRA
4111	- ELANA LOMBARD CLC H2O TBR VIS	7119	KURT LORENZ ALT CLC ECN OLG RNG
2476	- LARRY LOMBARD CLC ECN TBR		TBR VIS WRA
1415	- CAROL LOMBARDI CLC HRB	1982	R M LORENZATO CLC OLG TBR WRA
5982	- ANGELA LOMBARDI ALT CLC HRB OLG	3388	MARK LORENZEN CLC ECN FLE H2O HRB
	REC RNG TBR WLD WRA	5623	OLG REC RNG TBR TRL WLD WRA
9394	- STEPHEN LOMBERS ALT CLC TBR WRA		MARK LORENZEN ALT CLC HRB OLG REC
1309	- CARMEN G LOMEK ALT CLC ECN HRB	9023	RNG TBR WLD WRA
	OLG REC TBR VIS WLD		MARK LORENZEN ALT CLC ECN OLG RNG
11554	- ANDREA LONDON & BILL ZWEIGENBAUM:		TBR VIS WRA
	REC	3106	CINDY LORENZO ALT ECN GEN
3400	- RICHARD LONEALL CLC TBR	3109	RONALD LORENZO ALT ECN GEN
3030	- ALISON LONG ALT CLC HRB OLG TBR	9061	WILHELMINA LORES ALT CLC HRB OLG
	WLD WRA		REC RNG TBR WLD WRA
3920	- BILL & CHRIS LONG OLG REC TBR TRL	9900	JOHN S. LORESTE CLC OLG TBR WRA
	WLD WRA	3483	- JANICE LOSKIN CLC HRB
7127	- CATHERINE LONG ALT CLC ECN OLG	8794	BARBARA J LOSKOT ALT CLC ECN OLG
	RNG TBR VIS WRA		RNG TBR VIS WRA
257	- CHARLOITE LONG ALT CLC HRB WLD	8795	VICTOR N LOSKOT ALT CLC ECN OLG
	WRA		RNG TBR VIS WRA
1003	- CHARLOITE LONG ALT	6105	- DONNA LOTT ALT CLC TBR WRA
947	- CHARLOITE & ROBERT LONG ECN	8786	JAMES R LOT ALT CLC ECN OLG RNG
3385	- CHRISTINE LONG CLC OLG REC TBR TRL		TBR VIS WRA
	WLD WRA	4334	DON LOTTER ECN REC TBR
1527	- JENNIFER LONG ALT CLC ECN HRB OWL	10595	ANNABEELE ODELL LOUCLES CLC HRB
	RDS REC RNG TBR TRL VIS WIN WLD WRA		RDS RNG TBR
4645	- JENNIFER LONG CLC H2O HRB REC TBR	8709	PARK L LOUGHLIN CLC REC
	TRL WLD WRA	11070	LOUISIANA-PACIFIC CORP HOWARD FISH
5061	- JENNIFER LONG ALT CLC ECN OLG RNG		TBR
	TBR VIS WRA	11304	- LOUISIANA-PACIFIC CORP HOWARD S
754	- MARK LONG TBR		FISH ECN
7067	- P LONG ALT CLC HRB OLG REC RNG	2457	- LOUISIANA-PACIFIC CORP CLIFFORD
	TBR WLD WRA		JOLOD GENTBR
1670	- ROBERT E LONG ALT GEN	1528	- LOUISIANA-PACIFIC CORP GREG KOSTICK
9184	- VERA LONG ALT CLC ECN OLG RNG TBR		ECN OWL TBR
	VIS WRA	11202	LOUISIANA-PACIFIC CORP GREG P. KO
4695	- KEN LONGO ALT CLC ECN TBR WRA	909	STICK ECN OWL REC RNG TBR WLD WRA
4647	- SUSAN HASSETT LONGO ALT CLC TBR		LOUISIANA-PACIFIC SI-DIV WILLIAM DOR-
	WRA	928	RELL ALT CLC TBR
10185	- SANAY LONGS ALT CLC HRB OLG RDS		LOUISIANA-PACIFIC SI-DN SCOT
	TBR	832	KOEHLER ECN OWL REC WRA
8882	- DEANA LONSDALE ALT CLC HRB OLG		LOUISIANA-PACIFIC SI-DIV JOHN MAR-
	REC TBR WLD WRA	697	SHALL ECN GEN TBR WRA
			LOUISIANA-PACIFIC SI-DN RANDY
			VASQUEZ ECN REC TBR WLD WRA

9575	- GUY LOUSON CLC OLG TBR WRA	7157	JUNE LUCLAN ALT CLC TBR WRA
3531	- DOLORESLOVAS CLC	540	JOHN LUCICH TBR
5977	FRANCISCO LOVATO ALT CLC HRB OLG	588	JOHN LUCICH TBR
	REC RNG TBR WLD WRA	1559	CLAUDIA LUCKEN ALT GEN VIS
8259	MIKE LOVATO ALT CLC HRB OLG REC	3886	DANIEL LUCKENBILL CLC TBR
	RNG TBR WLD WRA	6853	LINDA LUCKEY CLC TBR
4285	SANDRA LOVE CLC	1202	IRWIN & PHYLLIS LUCKMAN CLC ECN
1158	KARLALOVELESS TBR		HRB OLG TBR WRA
1370	JOHN T LOVELESS, JR .TBR	43	MRS LESLEY LUEVANO ECNTBR
7527	SHANNON LOVERE' ALT CLC HRB OLG	732	IRMGARD LUGINBUEHL TBR
	REC RNG TBR WLD WRA	7954	MAX J LUICK ALT CLC TBR WRA
5664	J LOVETT' ALT CLC ECN OLG RNG TBR	3861	WILLIAM W. LUKENSMAYER, M D CLC
	VIS WRA		HRE REC TBR WRA
335	JUDITH L LOVETT' CLC HRB REC TBR	272	ROBERT C. LUKESH, M.D CLC REC TBR
	WLD WRA	2658	LUMBER PRODUCT SALES CO I
5592	CASSIE LOVING ALT CLC HRB OLG REC		G LEWIS ECNTBR
	RNG TBR WLD WRA	2052	LUMBER PRODUCT SALES CO JOHN M
5437	CATHERINE LOVING. ALT CLC ECN H2O		WEESTER' TBR
	OLG REC RNG TBR VIS WLD WRA	2906	LUMBER PRODUCT SALES CO JOHN M
6446	CORINAL LOVING ALT CLC ECN GEN OLG		WEBSTER TBR
	RNG TBR VIS WRA	10935	BRENDA LUNA CLC
6438	- ELIZIBETH LOVING' ALT CLC ECN HRB	1442	TERRI LUNA' CLC WRA
	OLG RNG TBR VIS WRA	3400	NANCYLUND CLCTBR
5591	- K LOVING ALT CLC HRB OLG REC RNG	6854	JAMES E LUNDY, JR ALT CLC ECN HRB
	TBR WLD WRA		OLG REC RNG TBR WLD WRA
6445	- LAURENCE LOVING ALT CLC ECN GEN	1364	WAYNE LUNEY. CLC ECN
	OLG RNG TBR VIS WRA	8564	SETH LUNINE CLC GEN OLG TBR WRA
3599	- LEA LOVING' ALT CLC ECN HRB OLG REC	3458	CESAR A. LUONGO ALT CLC ECN HRB
	RNG TBR VIS WLD WRA		OLG REC RNG TBR WLD WRA
10150	- JENNIFER LOW. CLC	8373	L LURDUE. ALT CLC HRB OLG REC RNG
5040	- BARBARA LOWDON ALT CLC HRB OLG		TBR WLD WRA
	REC RNG TBR WLD WRA	3500	DAN LURSHARF CLC TBR
3500	- LINDA LOWE CLC TBR	2905	NANCY K. LUSK ALT
5473	- ROBERT LOWE. ALT CLC ECN OLG RNG	11477	NANCY K LUSK GEN
	TBR VIS WRA	1396	MARK LUSTER GEN TBR
6686	- KEITH LOWELL: ALT CLC ECN OLG RNG	4879	LEX LUTHER ALT CLC HRB OLG REC RNG
	TBR VIS WRA		TBR WLD WRA
11444	- JUNE LOWEN CLC H2O HRB OLG RDS	5628	DEAN LUTTER ALT CLC HRB OLG REC
	REC RNG TBR TRL WLD		RNG TBR WLD WRA
4290	- MR & MRS ARTHUR LOWEN CLC GEN	9118	PETER LUTTICHAU' ALT CLC HRB OLG
	H2O HRB OLG RDS REC RNG TRL WIN		REC RNG TBR WLD WRA
4738	- THOMAS LOWERY, MD ALT CLC HRB	10147	SUSAN LUTZ ALT CLC ECN OLG RNG TBR
4503	- THEA LOWRY ALT RDS TBR		VIS WRA
10103	- DAVID W LOYD ALT CLC ECN OLG RNG	1724	ROGER W LUTZE CLC ECN HRB TBR VIS
	TBR VIS WRA		WRA
8270	- KENNETH LOYD ALT CLC ECN GEN OLG	11371	DR JAMES & JEAN LUVALLE ALT CLC
	RNG TBR VIS WRA		ECN HRB REC TBR TRL WIN
10101	- ROSA M LOYD ALT CLC ECN OLG RNG	8971	JEAN L LWALLE ALT CLC REC TBR WRA
	TBR VIS WRA	1776	AMBER LUVMOUR CLC ECN HRB TBR VIS
6066	- ANGEUCA LOZANO. CLC RDS TBR		WRA
415	- ROGER & SUSAN LUBIENS. CLC	2061	AMBER LWMOUR CLC
416	- ROGER & SUSAN LUBIENS RDS TBR	12071	AMBER LWMOUR CLC
968	- ROGER & SUSAN LUBIENS TRL	1175	G SAMBHAVA LUVMOUR CLC
3018	- ELAINE LUBISCH CLC ECN HRB OLG TBR	1775	G SAMBHAVA LWMOUR CLC ECN HRB
3936	- ELAINE LUBISCH ALT CLC HRB OLG TBR		TBR VIS WRA
7649	- IRA LUBKIN ALT CLC TBR WRA	368	JASETTE LUVMOUR ALT CLC TBR
3136	- HEATHER & SHANNON LUCAS CLC OLG	1773	JASRTE LWMOUR CLC ECN HRB TBR
	TBR		VIS WRA
6853	- JAMES D LUCAS CLC TBR	11839	JASETTE LUVMOUR CLC FLE TBR
3725	- KARL LUCAS ALT CLC HRB OLG TBR WRA	2310	SAMBHAVA LUVMOUR CLC GEN HRB
7201	- LUELLA L LUCAS ALT CLC ECN OLG RNG	270	SAMBHAVA LWMOUR ALT CLC GEN HRB
	TBR VIS WRA		TBR
3376	- MARY LUCAS ECN RDS TBR	9847	SERINA LY CLC OLG TBR WRA
666	- ORLANDO J LUCAYO ECN GENTBR	5585	STEN LY ALT CLC HRE OLG REC RNG
6339	- CAROL PATTERSON LUCCA CLC ECN		TBR WLD WRA
	RDS TBR	4640	LORRAINE LYDON ALT CLC REC
7588	- LESLIE LUCEAS ALT CLC ECN OLG RNG	10955	PHILIP A LYDON ALT CLC ECN FSH H2O
	TBR VIS WRA		HRB SNP TBR TRL WLD WRA

5751	- JOHN LYELL ALT CLC ECN OLG RNG TBR VIS WRA	5017	- PAUL MACK: CLC ECN HRB TBR VIS WRA
3500	- JOHN LYER: CLC TBR	5291	- RICHARD MACK: ALT CLC ECN OLG RNG TBR VIS WRA
8632	- SHIRLEY S. LYHNE & JULES M EICHORN: CLC HRB TBR WRA	6853	- RICHARD A. MACK: CLC TBR
2792	- PHILIP R. LYLE: ALT ECN GEN REC TBR	1556	- BARET E. MACKAY TBR
1795	- JOSEPH SLOAN LYLES: CLC OLG	896	- MR. & MRS. DENNIS MACKAY: TBR
11016	- KATHLEEN M. LYMAN: ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	3408	- DAVID E. MACKENROTH: ALT CLC HRB OLG REC TBR VIS
8356	- CAROLYN LYNCH: CLC H2O HRB REC TBR VIS	4053	- GAIL MACKENROTH: ALT CLC HRB TBR
245	- JENNY F. LYNCH: CLC REC TBR	3373	- HOLLY MACKENZIE: CLC TBR WRA
11237	- TIM LYNCH: ECN GEN TBR	8808	- S.C. MACKENZIE: CLC ECN
20051	- TIM LYNCH: ECN GEN TBR	8415	- ANDREA L. MACKENZIE ALT CLC HRB OLG REC RNG TBR WLD WRA
11509	- JOHN H. LYNCH, IV: CLC DRT HRB	1995	- DAVID D. MACKEY: ALT ECN GEN
11497	- ANNE LYNESS: ALT CLC GEN H2O HRB TBR	7128	- LINDA MACKEY: ALT CLC ECN OLG RNG TBR VIS WRA
11447	- GEORGIANNA LYNN: CLC	1929	- PAMELA MACKEY: ALT ECN GEN
8266	- LARRY LYNN: ALT CLC ECN OLG RNG TBR VIS WRA	3857	- JOHN G. MACKINNEY: CLC HRB TBR
8018	- TAMARA LYNN: ALT CLC ECN OLG RNG TBR VIS WRA	11703	- JOHN G. MACKINNEY: CLC GEN HRB TBR
2205	- ARNOLD E. LYON: ECN TBR	369	- KENT MACKINNON: ALT CLC ECN TBR
1088	- LENNIS LYON: CLC	5360	- KENT MACKINNON: ALT CLC ECN OLG RNG TBR VIS WRA
3058	- RAYMOND W. LYON: TBR	11509	- KATIE MACKS: CLC DRT HRB
10630	- FRANCIS LYONS: CLC H2O HRB REC TBR VIS	6119	- ALLAN MACLEOD: ALT CLC TBR WRA
5676	- GEORGE LYONS: ALT CLC HRB OLG REC RNG TBR WLD WRA	9612	- ANNE B.J. MACLEOD: ALT CLC TBR WRA
4394	- HELEN LYONS: ALT CLC HRB OLG TBR WLD WRA	6342	- MARTY MACPHAIL ALT CLC HRB TBR WRA
5011	- STEVEN LYONS: CLC HRB	8179	- RENATA MACULANS: ALT CLC HRB OLG REC RNG TBR WLD WRA
2740	- MARCUS M.: CLC TBR	8167	- STEPHEN MADDEN: ALT CLC HRB OLG REC RNG TBR WLD WRA
8451	- MICHAEL P. M.: ALT CLC HRB OLG REC RNG TBR WLD WRA	3547	- COLBY MADDOX: CLC HRB OLG RDS TBR
7155	- MICHELE MAAGER: ALT CLC TBR WRA	5246	- HEATH MADDOX ALT CLC HRB OLG REC RNG TBR WLD WRA
6290	- JULIE MAAKS: ALT CLC TBR WRA	2495	- THOMAS C. MADDOX: ALT ECN HRB OLG TBR
8178	- KARL MAARLANS ALT CLC HRB OLG REC RNG TBR WLD WRA	444	- DORIS MADDUX: CLC TBR TRL WRA
4957	- JUDY LEE MABEN: CLC TBR	7923	- EUGENE MADDY: REC WRA
11219	- PAUL MABEN: ECN	11294	- ALLAN L. MADER: ECN TBR
3648	- D. MACASKILL: REC	5875	- ROSALEND MADICA: ALT CLC HRB OLG REC RNG TBR WLD WRA
1167	- BEATRICE MACDERMOTT: ALT CLC ECN REC TBR WRA	9782	- ELIZABETH MADIE: ALT CLC TBR WRA
456	- ALEC MACDONALD: CLC	7908	- RUTH MADISON: ALT CLC HRB OLG TBR WLD WRA
1015	- BREELYN MACDONALD: TBR	4109	- GEORGE MADSON: ALT CLC HRB OLG TBR WLD WRA
10479	- CATHERINE D. MACDONALD: ALT CLC TBR WRA	6713	- PAUL MADTZER: ALT CLC HRB OLG REC RNG TBR WLD WRA
4228	- GREG MACDONALD: ALT CLC HRB RDS TBR	1402	- RON MAGGINI: ECN TBR
1168	- JOHN GARRETT MACDONALD: CLC H2O HRB OLG RDS TBR	5640	- ROSEMARIE MAGGIO: ALT CLC HRB OLG REC RNG TBR WLD WRA
490	- ROBERT MACDONALD ECN GEN TBR VIS	5819	- ISAMA MAGLEBY: ALT CLC HRB OLG REC RNG TBR WLD WRA
8668	- ROD MACDONALD: ALT CLC GEN HRB RDS TBR	5237	- SID MAGLEBY: ALT CLC HRB OLG REC RNG TBR WLD WRA
1347	- ANNI MACDOWELL CLC FLE GEN HRB	10872	- TSAMA MAGLEBY: CLC
8802	- MARIA L. MACHADO: CLC ECN FAC HRB MIN PLN RNG TBR VIS	1510	- DUANE L. MAGORIAN: TBR
2253	- JIM & MILDRED MACHELL: ALT CLC RDS REC RNG TRL	4080	- JOSEPH MAGRUDER: ALT CLC ECN GEN HRB TBR
10646	- MR. & MRS. MACHELL: CLC H2O HRB REC TBR VIS	8247	- HAROLD MAGUIRE: CLC HRB
6384	- SCOTT MACHIES: ALT CLC HRB OLG REC RNG TBR WLD WRA	1433	- HAROLD L. MAGUIRE: ECN TBR
1308	- T. MACHOLD: TBR	3708	- KATIE MAGUIRE: CLC FLE H2O HRB TBR WRA
3211	- MICHAEL E. MACHSON: CLC FSH HRB TBR	5287	- DAVID MAHAN: ALT CLC HRB OLG REC RNG TBR WLD WRA
4888	- CARIN MACK: ALT CLC HRB OLG REC RNG TBR WLD WRA	5987	- JAMES MAHAN: ALT CLC HRB OLG REC RNG TBR WLD WRA
		5286	- KATHY MAHAN: ALT CLC HRB OLG REC RNG TBR WLD WRA

3973	- JIM & JUNE MAHARTHY REC	9450	- SUSAN MALUZA ALT CLC HRB OLG REC
9257	- VALERIE MAHER CLC TBR		RNG TBR WLD WRA
5408	- ERIN MAHON CLC H2O HRE LND OLG	9748	- JOANNE MALZALAN ALT CLC ECN OLG
	RDS REC RNG TBR TRL VIS WLD		RNG TBR VIS WRA
10202	- MAIA ALT CLC TBR WRA	5226	- CHRISTINA MANCHESTER ALT CLC HRB
10025	- P J MAIGAN CLC GEN HRB TBR		OLG REC RNG TBR WLD WRA
3500	- STEPHANIE & MARGARET MAIN CLC TBR	1506	- BOB MANCHESTER, JR ECN TBR
9203	- KERRY & NANCY MAJR CLC OLG RDS TBR	1509	- ROBERT E MANCHESTER, SR ECN TBR
11018	- MARTIE MAIRES ALT CLC ECN FSH H2O	4926	- NANCY MANDALA ALT CLC HRB OLG REC
	HRB SNP TBR TRL WLD WRA		RNG TBR WLD WRA
3036	- JOHN MAITIA ECN GEN	10458	- DAVID MANDEL ALT CLC TBR WRA
46	- PATRICIA MAJCHER CLC H2O REC	2816	- R MANDEL CLC
9884	- JOSEPH MAJER CLC HRB OLG RDS TRL	7792	- C E & L MANDEVILLE REC WIN WRA
8655	- DELORIS MAJERSW CLC HRB TBR	10481	- KATHLEEN MANGA ALT CLC TBR WRA
10914	- CHADMAJOR GEN	4315	- JENNIFER MANGEL LC TBR
4137	- JACK MAJOR CLC GEN H2O OLG TBR	35w	- CINDY MANLEY CLC TBR
10912	- JENNY MAJOR GEN TBR	6851	- BARBARA MANN TBR
10916	- WILLIAM MAJOR ECN TBR	3500	- BARBARA & HARRY MANN CLC TBR
1156	- GEORGE E MAKI CLC OWL TBR	11279	- RON MANN. REC
1284	- JENNIFER MALBERG CLC ECN OLG REC	6507	- TARA A MANN ALT CLC HRB OLG REC
	TBR VIS WLD		RNG TBR WLD WRA
1332	- NANCY MALBERG CLC HRB REC TBR	1997	- MIKE MANNA ALT ECN GEN
4230	- NANCY MALBERG ALT CLC HRB OLG REC	1975	- KAREN MANNATT HRB LND
	RNG TBR WLD WRA	10803	- JAMES MANNING ALT CLC ECN OLG RNG
444	- FRANCES C MALCOLM CLC TBR TRL		TBR VIS WRA
	WRA	8757	- ROBERT M. MANNO ALT CLC ECN OLG
9569	- MRS MARION MALCOLM, CLC H2O HRB		RNG TBR VIS WRA
	REC TBR VS	4705	- AMY MANOCCO. CLC TBR
10440	- CLARA MALDONADO CLC H2O HRB REC	5715	- SANDRA MANROSS ALT CLC HRB TBR
	TBR VIS	4781	- MARY MANSAN CLC OLG TBR WRA
9547	- JOSE MALDONADO CLC	10687	- KURT MANSFIELD ALT CLC HRB OLG REC
9484	- ELLEN MALFA ALT CLC TBR WRA		RNG TBR WLD WRA
7250	- ROBIN MALIVER ALT CLC TBR WRA	426	- LYNNE J. MANSFIELD LND RDSTBRTRL
11758	- L MALKIN ALT CLC GEN TBR WLD WRA		WRA
988	- MALLARD CREEK INDUSTRIES STEVE MOR	925	- LYNNE J MANSFIELD RNA RNG WRA
	GAN ECNTBR	9876	- SCOTT MANSFIELD. CLC HRB OLG RDS
7600	- LANE C MALLE ALT CLC TBR WRA	1019	- STANLEY R MANSFIELD LND RDS REC
11040	- MARTHA J MALLERY ALT CLC ECN FSH		TBR TRL WRA
	H2O HRB SNP TBR TRL WLD WRA	6460	- FRANK MANSKE TBR
4990	- JAYANTHI MALLEY ALT CLC ECN OLG	10596	- PAUL MANTLE CLC GEN HRB REC TBR
	RNG TBR VIS WRA	444	- LAURA MANUEL' CLC TER TRL WRA
8441	- KEITH EDWARD MALLEY CLC GEN HRB	3878	- JOHN B MAPLE CLC GEN TBR
	OLG RDS REC RNG SNP TBR TRL VIS WLD	1923	- KATHY MAPLE ALT ECN GEN
	WRA	1933	- KENNETH MAPLE ACT ECN GEN
1679	- STEVEN MALLOCH CLC H2O TBR	1912	- STACIE MAPLE ALT ECN GEN
8869	- LINDA MALLORY. ALT CLC ECN OLG RNG	3400	- DIANE MARASCH CLC TBR
	TBR VIS WRA	2685	- JOHN MARCACCIO. ECN TBR
454	- BRUCE MALNOR CLC DRT GEN HRB TBR	10522	- KEELI MARCEAI' CLC GEN HRB TBR
449	- CAROL MALNOR' CLC HRB TBR	5251	- DAVID MARCHUS ALT CLC HRB OLG REC
8379	- DANNY E MALONE ALT CLC HRB OLG		RNG TBR WLD WRA
	REC RNG TBR WLD WRA	5252	- DOMINEE MARCHUS ALT CLC HRB OLG
10904	- DELL MALONE TBR TRL		REC RNG TBR WLD WRA
3268	- ROD MALOUF ALT CLC HRB OLG TBR	5194	- LINDA MARCHUS. ALT CLC HRB OLG REC
	WLD WRA		RNG TBR WLD WRA
3500	- EVELYN & B MALSTROM CLC TBR	9702	- LORETTA MARCUM ALT CLC ECN OLG
6727	- MICHAEL MALTAS CLC HRB OLG REC		RNG TBR VIS WRA
	RNG TBR VIS WRA	11509	- MARION MARCUOSON CLC DRT HRB
11510	MICHAEL & SUNNE MALTAS CLC HRB	8562	- MARDE SECULAR MISTRS CLC GEN OLG
	OLG TBR VIS WRA		TBR WRA
9641	TJUN MALTE ALT CLC TBR WRA	2116	- G MARDILLA ECN
8255	KEVIN MALTEESE ALT CLC ECN OLG RNG	3500	- G & A MARENO CLCTBR
	TBR VIS WRA	5085	- RACHAEL MARGOLIN ALT CLC ECN OLG
9734	ANDY MALTIN ALT CLC ECN OLG RNG		RNG TBR VIS WRA
	TBR VIS WRA	5385	- CHRISTINE MARGRET ALT CLC HRB OLG
2645	RICK & HARRIET MALTIN ALT CLC HRB		REC RNG TBR WLD WRA
	OLG TBR WLD WRA	8615	- N E L M MARGUART CLC ECN HRB RNG
			TBR

11694	- JAMES & SHIRLEY MARHS. CLC TBR	6064	- EDITH J MARTIN CLC GEN HRB
4567	- HELEN MARIA CLC TBR	4255	- EDWARD MARTIN ALT PLN
11090	- ERNEST MARIER' CLC ECN GEN RDS TBR	1426	- ELIZABETH J MARTIN CLC HRB TBR WRA
935	- MARIN CONSRV LEAGUE ROGER HOOPER ECN GEN OLG REC TBR	2773	- ERIC MARTIN CLC FSH HRB REC RNG TBR WRA WSR
4052	- GEORGE MARINO. CLC H2O REC TBR	9766	- GAREN MARTIN ALT CLC TBR WRA
410	- MICHELLE MARINO. ALT HRB REC TBR WLD	7399	- GERI MARTIN CLC OLG TBR WRA
8591	- MARK SPORTS MARKS GOLDSMITH CLC REC	526	- HELEN J MARTIN RDS TBR WRA
3392	- DARLENE MARKEY DRT ECN H2O OLG TBR VIS	807	- JAMES C MARTIN TBR VIS WRA
1125	- GENE MARKLEY CLC HRB RNG TBR WRA WSR	3262	- JAMES F MARTIN ALT CLC HRB OLG TBR WLD WRA
3956	- M KEESEE & M MARKS CLC HRB OLG RDS REC RNG TBR TRL WRA	6690	- JEAN MARTIN ALT CLC ECN OLG RNG TBR VIS WRA
3524	- SHIRLEY MARKS CLC TBR	9284	- JEANNE E MARTIN ALT CLC ECN HRB OLG REC TBR WLD WRA
5460	- MARK MARLEN. ALT CLC ECN OLG RNG TBR VIS WRA	2518	- JUDY MARTIN ALT CLC HRB OLG TBR WLD WRA
10935	- CATHERINE M MARLER CLC	5309	- KURT MARTIN ALT CLC HRB OLG REC RNG TBR WLD WRA
6698	- KATHLEEN MARONEY. ALT CLC HRB OLG REC RNG TBR WLD WRA	4075	- LINDA MARTIN. ALT CLC HRB OLG REC RNG TBR VIS WLD WRA
11425	- ETHEL MARQUART. CLC HRB RNG TBR	3296	- M S MARTIN CLC HRE
4377	- E. MARR CLC OLG	8736	- MICHAEL G MARTIN CLC
8850	- JAMES & MARGE MARR. CLC H2O HRB REC TBR VIS	3150	- MIKE MARTIN CLC HRB
6490	- LYNNETTE MARR TBR	9480	- MIKE MARTIN ALT CLC TER WRA
4153	- LYNN MARRBARD ALT CLC H2O LND OLG RDS REC RNG TBR TRL VIS WLD WRA	11512	- PAMELA A. MARTIN CLC HRB REC WRA
4578	- KIM MARRERO. CLC	4985	- PATRICK MARTIN CLC HRE
5151	- ROBERT MARRILY ALT CLC ECN OLG RNG TBR VIS WRA	11111	- ROBIN MARTIN ALT FLE GEN HRB RNG TBR
7566	- MR & MRS DAVID MARROA ALT CLC ECN OLG RNG TBR VIS WRA	4805	- ROBYN MARTIN DRT FLE HRB REC RNG SIA SNP TBR
5243	- JASON MARROWE ALT CLC HRB OLG REC RNG TBR WLD WRA	6974	- ROBYN MARTIN ALT CLC H2O HRB OLG REC RNG TBR WLD WRA
8064	- LINDA MARS ALT CLC TBR WRA	1616	- ROBYN J MARTIN ALT CLC GEN H2O SNP TBR
8933	- ELLEN MARSH ALT CLC HRB OLG REC RNG TBR WLD WRA	10924	- SHAREN MARTIN ALT CLC TBR WRA
6937	- GLENDA MARSH. ALT CLC TER WRA	8118	- SUSAN MARTIN' CLC HRB TBR
6131	- KATHLEEN MARSH. ALT CLC TBR WRA	3848	- M S MARTIN, L S ALT CLC HRB
7178	- LAURA K. MARSH ALT CLC TBR WRA	2515	- THOMAS B MARTIN ECN TBR
8494	- CARYN MARSHALL. ALT CLC ECN HRB OLG TBR WLD WRA	2285	- JOHN R MARTIN CLC TBR
5145	- EMILY MARSHALL. ALT CLC HRB OLG REC RNG TBR WLD WRA	268	- LINDEN P MARTINEAU' CLC HRB OLG RDS TBR
8312	- GINA MARSHALL ALT CLC HRB OLG REC RNG TBR WLD WRA	5062	- LINDA MARTINEZ ALT CLC ECN OLG RNG TBR VIS WRA
5240	- JOAN MARSHALL' ALT CLC HRB OLG REC RNG TBR WLD WRA	6543	- VICTOR M MARTINEZ. ALT CLC ECN OLG RNG TBR VIS WRA
2415	- JOHN MARSHALL WRA	444	- CAROL SUE MARTINI CLC TBR TRL WRA
3968	- JOHN MARSHALL ALT CLC HRB OLG TBR VIS WLD WRA	444	- ED MARTINI. CLC TBR TRL WRA
11109	- JOHN MARSHALL ECN	8148	- BARBARA MARTIS CLC
10153	- KIM MARSHALL CLC GEN	5305	- WENDY MARTLING. ALT CLC HRB OLG REC RNG TER WLD WRA
9247	- MR, & MRS JAMES R MARSHALL CLC H2O HRB REC TER VIS	5812	- MARTIS MARTY. ALT CLC ECN OLG RNG TBR VIS WRA
2612	- CAROLYN MARTELLO ALT CLC TBR TRL VIS	5627	- SARAH MARVIN ALT CLC HRB OLG REC RNG TBR WLD WRA
2611	- SHELLY MARTELLO ALT CLC OLG TRL VIS WRA	11309	- MARYSVILLE CITY COUNCIL ELISABETH AHART ALT ECN GEN TER
2254	- (FAMILY) MARTIN CLC	10176	- SHAMAYNA MARZEN CLC RDS
6853	- CELE MARTIN CLC TBR	7972	- ANDY D MASAN. ALT CLC HRE OLG REC RNG TBR WLD WRA
5346	- CINDY MARTIN ALT CLC ECN OLG RNG TBR VIS WRA	10759	- CHARLES MASCHKA CLC H2O HRB REC TBR VIS
5380	- EO MARTIN ALT CLC ECN OLG RNG TBR VIS WRA	1206	- FLORENCEL MASE CLC
		2624	- WALTER MASLAN CLC ECN FSH GEN HRB TBR

4786	LEOLA MASON CLC OLG TBR WRA	1605	- HOWARD MAYO GEN TBR
1518	TAD MASON REC	3605	- WILLIAM C MAYO ECN TBR
3212	BECKY MASSEY CLC FSH HRB TBR	4794	- TOM MAYS ALT CLC H2O HRB OLG TBR
3652	NEILL W MASTER CLC HRE TBR		WLD WRA
5688	DARREL MASTERHEEL' ALT CLC HRB OLG	4893	- TOM MAYS ALT CLC HRB OLG REC RNG
	REC RNG TBR TRL WLD WRA		TBR WLD WRA
2480	C E. MASTERS ALT CLC HRE OLG RNG	5304	- TOM MAYS ALT CLC HRB OLG REC RNG
	TBR WLD WRA		TER WLD WRA
1505	JAN MASTERS ECN TBR	7656	- D MAYSEY ALT CLC TBR WRA
137	- JEAN S MASTERS CLC ECN REC TER	3894	- ELAINE MAZER ALT TBR WLD
348	- LEE MASTERS CLC GEN HRB TER WLD	349	- CAROL A MAZERALL ALT CLC ECN HRB
5390	- PAUL MATA ALT CLC HRE OLG REC RNG		RDS TBR WRA
	TBR WLD WRA	6531	- PAUL G MAZUR ALT CLC ECN OLG RNG
1242	- GAIL MATELSON CLC ECN HRE TBR WLD		TBR VIS WRA
9399	- ROY S MATER ALT CLC TBR WRA	6978	- PAUL G MAZUR ALT CLC ECN OLG RNG
5733	- SUSANNA MATHAY CLC TBR WRA		TBR VIS WRA
5807	- BOB MATHEAY ALT CLC ECN OLG RNG	47	- PAUL G MAZUR, D C CLC HRE
	TBR VIS WRA	7025	- GARINA M MAZZUCCHI ALT CLC TBR
3752	- PATTY MATHENY ALT CLC HRB OLG REC		WRA
	RNG TER WLD WRA	590	- MC CO LOGGING JOHN MCCAFFREY
10483	- GREG MATHER ALT CLC TBR WRA		TBR
9742	- NANCY MATHEW ALT CLC ECN OLG RNG	3760	- E MCABER ALT CLC HRB OLG TBR WLD
	TBR VIS WRA		WRA
4496	- CRAIG MATHEWS ALT CLC ECN GEN OLG	3712	- CHRIS MCADAMS ALT CLC TBR WRA
	RNG TBR VIS WRA	6467	- MARIAN K MCADAMS ALT CLC ECN OLG
3626	- ELIZABETH MATHEWS ALT CLC TBR		RNG TBR VIS WRA
4355	- HOLLY MATHEWS ALT CLC HRB OLG REC	3713	- PATW MCADAMS ALT CLC TER WRA
	RNG TBR WLD WRA	538	- ANN MCADOO ECN
3461	- PHILIP MATIN REC WRA	7743	- L MCALISTER ALT CLC HRB OLG REC
1642	- CARLOS MATOS CLC RDS		RNG TBR WLD WRA
10337	- KATHERINE MATSUMURA ALT CLC ECN	3425	- MRS MCALLISTER REC
	OLG RNG TER VIS WRA	7224	- PATRICIA MCALLISTER ALT CLC HRB OLG
8863	- CHRISTIE W MATTAROLA ALT CLC HRB		REC RNG TBR WLD WRA
	OLG TBR WLD WRA	8040	- SUSAN MCALLISTER ALT CLC HRB OLG
3885	- FRANCINE MATTESON CLC WRA WSR		REC RNG TBR WLD WRA
700	- HARRY R MATHEWS CLC RDS REC TBR	2848	- J E MCAMIS, PRESIDENT TBR
671	- SCOT V MATHEWS ALT CLC REC WRA	8616	- PAT MCARANG ALT CLC ECN OLG REC
9580	- ALEXANDER MATTHIESSE CLC DRT HRB		RNG TBR VIS WRA
	OLG RNG TER WLD WRA	6853	- JAN E MCARCHER CLC TBR
10019	- DAVE MATULEWIEZ CLC GEN HRB TER	4314	- MARLA MCARRON ALT CLC HRE TBR
8505	- DIANE MAUGANS CLC ECN HRB LND OLG		WRA
	PLN REC RNG TBR TRL VIS WIN WRA	8300	- BARBARA B MCAUHF ALT CLC HRB OLG
3264	- M D MAURATH CLC OLG TBR		REC RNG TBR WLD WRA
20003	- ROBERT MAURER CLC TBR	2771	- SUSAN J MCBAIN CLC HRB RDS RNG
3730	- KATHY MAUSNER ALT CLC HRB OLG TBR		TBR
	WLD WRA	5488	- JOHN MCERIDE ALT CLC ECN OLG RNG
5176	- SHARON MAXWELL' ALT CLC ECN OLG		TBR VIS WRA
	RNG TBR VIS WRA	7020	- KATHERINE M MCBRIDE ALT CLC TBR
7440	- CARL L MAY ALT CLC HRB OLG REC		WRA
	RNG TBR WLD WRA	9931	- RICKY MCBRIDE CLC GEN HRB TBR
4407	- MICHAEL MAY CLC DRT H2O HRB TBR	2510	- CHARLES L MCBURNEY CLC DRT HRB
3142	- JODY MAYD CLC		TBR
7921	- MICHAEL MAYER ALT CLC HRB OLG TBR	6815	- THEODORE H MCCAIDE CLC TBR
	WLD WRA	3473	- JERRY MCCAFFREY GEN LND
2867	- THOMAS MAYER CLC ECN HRB TBR VIS	9967	- SCOTT MCCAGIC CLC GEN HRB TBR
	WRA	1958	- KEN MCCALL CLC WRA
8483	- PATTI MAYFIELD ALT CLC HRB OLG REC	358	- ELEANOR R MCCALLA CLC HRB TBR
	RNG TBR WLD WRA		WRA
2427	- MELODY MAYFIELD OWLTBR	1255	ZACK MCCALLAY TBR
711	- ROBERT MAYFIELD ECN OWL TBR WLD	4922	- LEE MCCALLEN ALT CLC HRB OLG REC
2491	- JOHN L MAYFIELD, D C CLC ECN HRB		RNG TBR WLD WRA
5742	- JONATHAN J MAYHEW CLC ECN OLG	9536	- HEATH MCCANN TBR
	TBR	1659	- L MCCANN CLC RDS WSR
6681	- SHARON MAYNARD ALT CLC HRB OLG	1309	- MARK MCCANN ALT CLC ECN HRE OLG
	REC RNG TER WLD WRA		REC TBR VIS WLD
11028	- CHIP MAYNARD ALT CLC ECN FSH H2O	3105	- JOHN MCCARTER ALT ECN GEN
	HRB SNP TBR TRL WLD WRA	9708	- WILLIAM MCCARTHY ALT CLC ECN OLG
			RNG TBR VIS WRA

10615	- BLYE MCCARTY· CLC H20 HRB REC TBR VIS	5383	- BOB MCCULLOUGH ALT CLC HRB OLG REC RNG TBR WLD WRA
3804	- ELSIE MCCARTY ALT CLC HRB OLG REC TBR WLD WRA	604	- R L MCCUOUGH. ECN OWL REC TBR
111	- EARL L MCCAULEY CLC TBR WLD	3500	- FRANCIS MCCUNE CLC TBR
90	- SALLY MCCAULEY. CLC OLG TBR	4147	- JO MCCLITCHAN CLC
7701	- KEELY MCCAUN. ALT CLC ECN OLG RNG TBR VIS WRA	4501	- JO MCCLITCHAN CLC RDS REC TBR WRA
8166	- KEVIN MCCAURTHY ALT CLC HRB OLG REC RNG TBR WLD WRA	4542	- KATHRYN MCDANIEL CLC HRB TBR
7513	- TILISA L MCCENLEY· ALT CLC HRB OLG REC RNG TBR WLD WRA	172	- REGIE S MCDANIEL TBR
10837	- A R MCCLAIN CLC TBR	10860	- SANDI MCDANIEL CLC FLE
6018	- MARY MCCLAIN ALT CLC ECN OLG RNG TBR VIS WRA	9965	- MARK MCDEAL CLC GEN HRB TBR
7193	- BRIAN MCCLAMMY ALT CLC TBR WRA	6130	- MAUREENMCDERMOTT ALT CLC TBR WRA
3901	- KATHERINE MCCLEARY ALT CLC HRB OLG REC RNG TBR WLD WRA	10684	- CLIFFORD G MCDIVITT ALT CLC ECN OLG RNG TBR VIS WRA
3877	- MRS JOHN A MCCLEAVE CLC	10425	- S MCDIVITT CLCRDS
8028	- MARTHA MCCLENDON ALT CLC ECN OLG RNG TBR VIS WRA	4524	- ANNE MCDONALD ALT CLC HRB OLG TBR WLD WRA
4778	- I MCCLING CLC GEN OLG TBR WRA	6853	- BEATRICE MCDONALD CLC TBR
7896	- GEORGE MCCLURE· ALT CLC HRB OLG REC RNG TBR WLD WRA	8483	- D. MCDONALD. ALT CLC HRB OLG REC RNG TBR WLD WRA
931	- NE E MCCLURE CLC GEN TBR WLD	9649	- J MCDONALD ALT CLC TBR WRA
11115	- DR G W , JR . ALT CLC ECN TBR	8931	- JIM MCDONALD ALT CLC HRB OLG REC RNG TBR WLD WRA
1069	- DR. GEORGE W. MCCLURE, JR ALT CLC GEN HRB	7446	- JOHN G. MCDONALD ALT CLC HRB OLG REC RNG TBR WLD WRA
1752	- DR. GEORGE V MCCLURE. JR CLC ECN HRB TBR VIS W	6913	- LINDA MCDONALD. ALT CLC TBR WRA
8663	- DR. G W MCCLURE. JR CLC ECN TBR	10201	- MARY K MCDONALD ALT CLC TBR WRA
11062	- J MCCOLLUM I TBR WRA	8001	- MORTON MCDONALD CLC FLE
3119	- C MCCONNELL. ALT ECN GEN	9883	- SHIRLEE MCDONNELL REC
2003	- DENISE A MCCONNELL· ALT ECN GEN	1008	- COLIN MCDONNELL TBR
3118	- JANE M ONNELL ALT ECN GEN	8881	- COLIN MCDONNELL ALT CLC GEN HRB OLG TBR WLD WRA
283	- MIKE MCCONNELL CLC HRB RNG TBR WRA	10775	- MARYLINN MCDONNELL ALT CLC HRB OLG REC TBR WLD WRA
5450	- ROD MC DONNELL ALT CLC ECN OLG RNG TBR VIS WRA	5846	- KATHLEEN MCDONOUGH' ALT CLC HRB OLG REC RNG TBR WLD WRA
3114	- J EY MCCONNELL· ALT ECN GEN	4042	- SANDRA MCDOUGALD ALT CLC ECN OLG RNG TBR VIS WRA
11344	- DAVID MCCORD. CLC HRB LND TBR	3324	- SALLY MCDOUGAU REC
7028	- JEFF MCCORD' ALT CLC TBR WRA	9896	- CLARK & PAULINE MCDOWELL. REC TBR TRL WRA
8553	- RICHARD K MCCORD CLC OLG TBR WRA	10811	- SUZANNE MCDOWELL CLC OLG TBR WRA
6678	- DON MCCORKLEY ALT CLC HRB OLG REC RNG TBR WLD WRA	6844	- SUZANNE & JOHN MCDOWELL CLC DRT H20 HRB OLG RDS TBR WLD WRA
3464	- CHRISTINE A MCCORMICK. ALT CLC HRB OLG REC RNG TBR WLD WRA	11039	- PETRA MCEVOY. ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA
8414	- JIM MCCORMICK ALT CLC HRB OLG REC RNG TBR WLD WRA	6635	- DENNIS MCEWAN CLC ECN FSH TBR WSR
10485	- SEAN MCCORT ALT CLC TBR WRA	4011	- RICK MCEWAN CLC ECN FAC HRB MIN PLN RNG TBR VIS
3443	- MICKEY MCCOY CLC	4352	- SHARON MCEWAN' CLC ECN FAC GEN HRB MIN PLN RNG TBR VIS
4950	- NANCY MCCOY CLC ECN GEN H20 REC RNG TBR WLD	4734	- GEORGIANA MCFARLAND' CLC HRB OLG RDS REC TBR WLD
1485	- MAUREEN P MCCRAE CLC HRB OLG OWL TBR TRL WLD WRA	6056	- NATHAN J MCFARLAND ALT CLC HRB OLG REC RNG TBR WLD WRA
9235	- PEGGY & LANCE MCCRAY ALT CLC HRB OLG REC TBR VIS WLD WRA	8215	- MCFARLANE· ALT CLC HRB OLG TBR WLD WRA
9517	- MICHELLE MCCREARY. ALT CLC ECN OLG RNG TBR VIS WRA	7927	- DAVID MCFARLANE ALT CLC HRB
6614	- KATHY MCCREENY CLC ECN FLE HRB TBR VIS	9798	- JACK MCFARREN ALT CLC TBR WRA
2794	- OLIVER MCCRUM ALT ECN GEN OLG RNG TBR TRL	4523	- MR & MRS. MCFARREN ALT CLC HRB OLG TBR WLD WRA
9935	- ANDREW MCCULLOUGH CLC GEN HRB TBR	6853	- MARY MCFELDER CLC TBR
		9161	- WILLIAM MCFICKEN ALT CLC ECN OLG RNG TBR VIS WRA

10939	- SHIRLEY MCFINSTER CLC HRE RDS TBR	2455	- RICK & CHERYL MCKINNEY ALT RDS WRA
4756	- JEFF MCGANN CLC	712	- HARRY MCKINNON TBR
1437	- JOYCE MCGARITY TBR	8448	- KEN MCKINSTRY CLC ECN FSH HRB HST RDS REC TBR WLD
1438	- RAY MCGARITY TBR	5254	- CAROL MCKINZIE ALT CLC HRB OLG REC RNG TBR WLD WRA
11083	- BOB MCGARR OWL	8694	- AILEEN MCKUELG ALT CLC ECN OLG RNG TBR VIS WRA
11581	- JOHN P MCGEE ALT CLC HRE RDS TER VIS	10905	- SUSAN MCLANE GEN TBR
11716	- MRS P MCGEE GEN	2548	- ROBERT MCLARTY CLC DRT ECN H20
2968	- PAT MCGEE ALT CLC ECNTBR	1603	- CHRIS MCLAUGHLIN GEN
7657	- THERESA MCGEE ALT CLC ECN OLG RNG TBR VIS WRA	7076	- JEANNE MCLAUGHLIN ALT CLC ECN OLG RNG TBR VIS WRA
1521	- JOHN MCGEHEE ECN TBR	9357	- KELLI MCLAUGHLIN ALT CLC HRB OLG REC RNG TBR WLD WRA
4833	- SUZAN MCGEWERN ALT CLC ECN OLG RNG TBR VIS WRA	1604	- KENNETH A. MCLAUGHLIN GEN
10766	- MRS MCGILLOWAY CLC OLG TBR WRA	3578	- MARK MCLAUGHLIN CLC TER V
10765	- TERRY M MCGILLOWAY CLC OLG TER WRA	3731	- MIKE MCLAUGHLIN ALT CLC HRE OLG TBR WLD WRA
11272	- BILL MCGINNIS REC	294	- ROBERT I MCLAUGHLIN ECN REC TBR TRL WRA
4041	- JAMES & PATRICIA MCGINNIS CLC TBR	3465	- JACK MCLEAD TBR
6491	- MYRTICE MCGINNIS ALT CLC HRB OLG TBR WLD WRA	6973	- DAVID MCLEAN ALT CLC HRB OLG RNG TBR WLD WRA
3197	- BRIAN MCGOVERN CLC	1235	- MICHAEL H MCLEAN ALT
3190	- MARIE MCGOVERN TBR	6639	- MICHAEL L MCLEAN CLC
2284	- TOM MCGOWEN TBR	6970	- PATRICIA MCLEAN ALT CLC HRE OLG REC RNG TBR WLD WRA
4545	- KAY MCGRADY CLC	1696	- WILLIAM SCOTT MCLEAN CLC ECN HRB TBR VIS WRA
2786	- ANNETTE MCGRATH TBR	9209	- NORMAN MCLEOD CLC H20 HRB REC TBR VIS
7355	- CAITLIN MCGRATH CLC OLG TER WRA	233	- NORMAND MCLEOD GEN RDS TBR TRL
1453	- CHARLES MCGRATH ECN TBR	7671	- MARIANNE MCLUNE CLC OLG TBR WRA
11031	- JEAN MCGRATH ALT CLC ECN FSH H20 HRB SNP TER TRL WLD WRA	8103	- CHRIS MCLUTEE ALT CLC ECN GEN OLG RNG TER VIS WRA
2639	- JUDY MCGUIRE CLC	6716	- MORGAN MCNEIL CLC TBR
1817	- MEL MCGUIRE ALT TBR	4110	- SARAH MCLUNE CLC TBR
9971	- SANAY MCGUIRE CLC GEN HR TBR	7979	- JOHN A MCNEELY ALT CLC ECN OLG RNG TER VIS WRA
9941	- GREG MCGUMMUS. CLC GEN HRBTER	8662	- JOHN MCMARNS CLC TER
4491	- CARMEN MCHUGH CLC HRB	9554	- MR & MRS MCMMASTER. CLC H20 HRE REC TBR VIS
12087	- BARBARA MCHUGH, PHD CLC OLG RDS TBR VIS WRA	791	- GARRETT MCMASTERS. TBR
3500	- JIMMY CLC TBR	3063	- TIM MCMILLAN ALT ECN GEN
4096	- LAMONT CLC TBR	347	- NEIL MCMILLAN ALT CLC HRB RDS TER
8082	- ALEX MCINTOSH ALT CLC TBR WRA	9331	- L M MILLAN. CLC WRA
10817	- DONALD SH CLC HRB	1165	- HAI F MCMONAGLE CLC ECN HRB OLG TBR WRA
9014	- DOUGLAS S MCINTOSH ALT CLC ECN GEN OLG RNG TBR VIS WRA	8867	- RICHARD E MCMULLEN ALT CLC HRE OLG TBR WLD WRA
9015	- LINDA MCINTOSH ALT CLC ECN OLG RNG TBR VIS WRA	6332	- NANCY MCMURPHY. REC
2015	- PATRICIA E MCINTYRE ALT ECN GEN	9466	- DEANNA MCNALLEN ALT CLC HRE OLG REC RNG TBR WLD WRA
7233	- HELEN MCIRVIN CLC HRE RDS	2461	- WINNIE MCNALLEY ALT ECN GEN
4530	- DAVID MCKAY ALT CLC ECN OLG REC RNG TBR VIS WRA	6009	- BARBARA MCNEELY ALT CLC ECN OLG RNG TER VIS WRA
7110	- DAVID MCKAY ALT CLC ECN OLG RNG TER VIS WRA	6010	- CAROLE MCNEELY. ALT CLC ECN OLG RNG TBR VIS WRA
5353	- MARSHALL MCKEE ALT CLC ECN OLG RNG TBR VIS WRA	70	- LARCH MCNEILL CLC TBR
5701	- MICCIE MCKEE CLC	1073	- LARCH MCNEILL CLC H20 HRB OLG RDS RNG TBR TRL
8737	- CATHY MCKEEN CLC REC VIS	8767	- PAUL K MCPADDEN ALT CLC ECN OLG RNG TBR VIS WRA
1990	- JON MCKENZIE ALT ECN GEN	5248	- MIKE MCPETERS ALT CLC HRB OLG REC RNG TBR WLD WRA
2081	- RICHARD MCKENZIE TBR	4266	- J D MCPHERSON RECWIN
1989	- TAMMIE MCKENZIE ALT ECN GEN	10780	- MYRA MCPHERSON ALT CLC HRB OLG TBR WLD WRA
9910	- MARGO MCKEON TBR		
1981	- MILEST MCKEY CLC ECN REC TER		
2281	- JOHN MCKIBBIN CLC		
1577	- JOHN P MCKIBBIN CLC ECN HRB TBR		
1972	- JOHN P MCKIBBIN CLC ECN REC TBR WLD		
1182	- KATHERINE MCKIBBIN CLC H20 TRL WLD		
529	- PHILIP D MCKIBBIN CLC ECN		
1942	- HERB MCKILLOP ECN		
2453	- RUSSELL MCKINLEY ECN OLG TER WLD WRA		

10783	- LEROY MCPHERSON, JR • ALT CLC FSH HRB OLG REC TBR WLD WRA	3005	- LU MELANDER' ALT CLC DRT HRE TER
9190	- CLANCY MCQUIGG ALT CLC ECN OLG RNG TER VIS WRA	3931	- LU MELANDER ALT CLC HRB TER
371	- MARY MCRAE CLC TER	4949	- M E W ALT CLC HRB OLG REC RNG TER WLD WRA
1048	- MARY MCRAE CLC GEN HRE	9841	- KARL MELBY ALT CLC GEN TER WRA
8667	- MARY MCRAE CLC HRB TBR VIS	9195	- AUBREY MELEISS ALT CLC ECN OLG RNG TER VIS WRA
7627	- C MCREYNOLDS ALT CLC TER WRA	5070	- SUSAN MELLIS ALT CLC HRB OLG REC RNG TBR WLD WRA
11509	- GREG MCRITZ CLC DRT HRE	9566	- MR & MRS PAULT MELLON CLC H2O HRE REC TBR VIS
4935	- BETTY J MCVEAN ALT CLC ECN OLG RNG TBR VIS WRA	4227	- RICHARD & PHYLLIS MELQUIST' ALT CLC HRB OLG REC RNG TER WRA WSR
4934	- STUART E MCVEAN, SR ALT CLC ECN OLG RNG TER VIS WRA	8119	- SUE MELQUIST ALT CLC HRE OLG TBR WLD WRA
9535	- MATT MEAD CLC HRE TER	9761	- AGI MELTON ALT CLC TER WRA
6972	- ROJA MEADOW ALT CLC HRE OLG REC RNG TER WLD WRA	7019	- BILL MELTON ALT CLC TER WRA
4214	- BECKY MEADOWS ALT CLC HRB OLG REC RNG TER WLD WRA	10935	- DONNAM MELTON CLC
6976	- BECKY MEADOWS ALT CLC HRB OLG REC RNG TBR WLD WRA	1139	- N.W. MELVIN, LND TBR
3788	- RAJA MEADOWS ALT CLC HRE OLG REC RNG TBR WLD WRA	1309	- MRS MEMBLEY ALT CLC ECN HRB OLG REC TER VIS WLD
2724	- RAJA DEVA MEADOWS ALT CLC HRB OLG TER WRA	6313	- WILLIAM MENCHINE' CLC GEN HRB TER
5728	- GLEN E MEAGHER: CLC REC RNG TRL WRA	9234	- PAM, TOM & FAMILY MENCONE' CLC H2O HRE REC TER VIS
3864	- KATHLEEN & PAUL MEAGHER' CLC HRB REC TER WRA	31	- PAM MENCONI ALT CLC
8681	- CHRISTOFOR MEALEAR ALT CLC ECN OLG RNG TER VIS WRA	11709	- PAUL MENCONI ALT CLC HRE
9042	- HANK MEALS ALT CLC HRB OLG REC RNG TER WLD WRA	11709	- TOM, STEVE, LISA, PAM MENCONI' ALT CLC HRE
10394	- HANK MEALS CLC ECN HRE RNG TER	2107	- GAIL MENDE CLC ECN TER
5750	- MIKE MEALS ALT CLC HRE OLG REC RNG TER WLD WRA	4241	- ABEL & JUDY MENDEGUIA ALT ECN REC RNG
7147	- PETER MEANS ALT CLC ECN OLG RNG TBR VIS WRA	5213	- MIKE MENDOZA' ALT CLC HRE OLG REC RNG TER WLD WRA
2130	- SHEILA MEANS CLC	4596	- RONALD MENDOZA CLC
11964	- W.W. MEANS, ECN TER WLD	998	- ROLIN L MENEFFEE ALT CLC HRB TBR TRL VIS
10287	- K. MECHLING' ALT CLC REC TER WRA	3785	- SUZANNE MENIG ALT CLC ECN OLG RNG TER VIS WRA
7371	- REBECCA MEDCALF CLC OLG TBR WRA	2839	- SUZANNE C MENIG OLG REC TBR WRA WSR
1462	- MEDFORD STEEL WILLIAM D THORNDIKE TBR	12237	- TOM A MENIG ALT CLC ECN OLG RNG TER VIS WRA
2075	- MEDICINE FLOWER MARINA EOKELMAN ALT CLC ECN H2O HRB OLG RNG TER TRL VIS WLD WRA	12249	- TOM A MENIG ALT CLC ECN OLG RNG TER VIS WRA
6284	- KATHLEEN MEDINA, ALT CLC TER WRA	4748	- KENNETH MENNEMEIER CLC
9482	- MARTINA MEDINA' ALT CLC TER WRA	6770	- JULIA MENTON' ALT CLC HRE OLG REC RNG TER WLD WRA
3400	- KATHRYN MEDLEY CLC TER	678	- JEFF MENZER ALT OLG
318	- J R MEDLOCK ECN TBR	8950	- TRACY & RAYMOND MENZIER, ALT CLC ECN OLG RNG TER VIS WRA
9834	- DORA T MEEK ALT CLC TER WRA	8042	- RAYMOND H MENZIES ALT CLC ECN OLG RNG TER VIS WRA
4807	- SHARON A MEEKER ALT CLC HRE OLG REC RNG TBR WLD WRA	3500	- CARMELIA MERCER CLC TER
4229	- SHARI MEGGS ALT CLC HRB OLG REC RNG TER WLD WRA	10305	- CONSTANCE MERCER' ALT CLC ECN OLG RNG TER VIS WRA
4046	- VICKI MEHALL, CLC FSH HRB TER	7148	- DOUGLAS MERCER ALT CLC ECN OLG RNG TER VIS WRA
7404	- DOUGLAS E MEHARN ALT CLC HRE OLG REC RNG TER WLD WRA	7933	- WILDA N MERCER' ALT CLC ECN OLG RNG TER VIS WRA
8513	- PAUL MEHOUDAR CLC OLG TER WRA	502	- MICHAEL D MERCHANT GEN TER
5409	- DAN MEIER ALT CLC ECN HRB OLG REC RNG TER WLD WRA	1671	- G.K. MERCOLA REC TRL WIN WRA
6348	- JACK H MEIER' ALT CLC ECN OLG RNG TER VIS WRA	6939	- JANET L MERCURIO ALT CLC HRE OLG REC RNG TER WLD WRA
8516	- L BRUCK MEIR CLC OLG TBR WRA	9392	- KAREN MERCURIO ALT CLC TER WRA
7150	- TERRY MEIRETN ALT CLC TER WRA	383	- ADA MERHOFF CLC TER
3400	- NORMA MEKER CLC TER	5842	- GLENN MERI ALT CLC HRE OLG REC RNG TBR WLD WRA
6716	- BARBARA MELANDER ALT CLC ECN HRE		
9472	- CARL MELANDER ALT CLC HRB OLG TER WLD WRA		

9981	NOAH MERIN ALT CLC TBR WRA	10218	- GUSTAVE MEYNES, IV ALT CLC TBR WRA
2985	JON MERKER ALT CLC HRB OLG REC RNG TBR WLD WRA	10790	- JOSE MICALLER ALT CLC TBR WRA
7420	DALE MERRELL ALT CLC HRB OLG REC RNG TBR WLD WRA	2680	- BILL MICHAEL CLC ECN H20 RDS TBR WLD WRA
10506	JOAN MERRIAM ALT CLC HRB TBR	10136	- PETER M MICHAEL ALT CLC ECN OLG RNG TBR VIS WRA
6977	DALE MERRILL ALT CLC HRB OLG REC RNG TBR WLD WRA	8049	- DOLORESMICHE ALT CLC ECN OLG REC RNG TBR VIS WRA
4619	GEORGE & VIVIAN MERRILL ALT CLC HRB OLG REC RNG TBR WLD WRA	7101	- CATHY MICHEL ALT CLC HRB OLG REC RNG TBR WLD WRA
6753	MELINDA MERRIT ALT CLC HRB OLG REC RNG TBR WLD WRA	1309	- STEVE MICHELSON ALT CLC ECN HRB OLG REC TBR VIS WLD
3953	- MELINDA MERRITT ALT CLC HRB OLG REC RNG TBR WLD WRA	2692	- ADAM MICK CLC OLG REC TBR VIS
9400	- PAUL MERRITT ALT CLC ECN OLG RNG TBR VIS WRA	5318	- TERRY MICKEL ALT CLC HRB OLG REC RNG TBR WLD WRA
20023	- HIGH MERRIUM CLC ECN GEN HRB LND TBR	5334	- TERRY MICKEL ALT CLC HRB OLG REC RNG TBR WLD WRA
8804	- RHONDA MERRY CLC ECN FAC HRB MIN PLN RNG TBR VIS	7546	- MRS TYLER MICOLEAU ALT CLC ECN HRB OLG RNG TBR VIS WRA
2956	- PAT MERSMAN CLC GEN HRB OLG RDS TBR TRL WSR	8855	- MRS TYLER MICOLEAU ALT CLC DRT ECN H20 OLG RNG TBR VIS WRA
593	RALPH MERTENS CLC	199	- BILL MICSAN DRT H2O HRB TBR
252	- AUDREY W MERTZ, M D ALT CLC HRB RDS TRL VIS WRA	2302	- GEORGE T MICSAN CLC DRT ECN HRB OLG RDS RNG TBR VIS WRA
1141	- MARY MESMER CLC TBR WLD	2367	- MID-STATES WHOLESAL LUMBER FRED D JAMES TBR
4981	- EDITH MESSENGER CLC ECN FAC HRB MIN PLN RNG TBR VIS	2916	- T R MIDDLEBROOK CLC ECN
8530	- KRIS MESSENGER ALT CLC ECN OLG REC RNG TBR VIS WRA	645	- ALICE MIDDLETON CLC OLG
5008	- DON MESSICK ECN GEN REC TBR	6276	- DEBRA MIDDLETON ALT CLC TBR WRA
4371	- HELEN MESSICK ALT DRT H2O	8766	- VIRGINIA MIENNO ALT CLC ECN OLG RNG TBR VIS WRA
3631	- TIM MESSICK ALT CLC	504	- MARY MIETH ALT CLC H2O HRB OLG TBR WLD
3506	- CHARLENE MESSNER CLC HRB REC TBR	5893	- MARY MIETH ALT CLC HRB OLG REC RNG TBR WLD WRA
10247	- ERIN J MESZUROS ALT CLC TBR WRA	6702	- G MIHSFELDT ALT CLC HRB OLG RDS REC TBR VIS
8157	- D METALLICA ALT CLC HRB OLG REC RNG TBR WLD WRA	5799	- STACY MIKISKI ALT CLC ECN OLG RNG TBR VIS WRA
3579	- MARY METCALF ECN TBR	10434	- MARINA MILAN CLC H20 HRB REC TBR VIS
10800	- ROBERT B METCALF CLC	4529	- MR. & MRS MILANESE CLC
10013	- JILL METCULFE CLC GEN HRB TBR	6166	- KEN MILES ALT CLC HRB LND TBR
5451	- S METHERBY ALT CLC ECN OLG RNG TBR VIS WRA	10360	- JAMES MILHOUS HRB TBR
2282	JULIUS & REBECA METTS CLC HRB OLG RDS TBR WLD WRA	983	- JOHN MILHOUS ECN
6279	MAURA METZ ALT CLC TBR WRA	9735	- TERESA MILHOUS ALT CLC ECN OLG RNG TBR VIS WRA
6481	DEAN N MEYER REC	3500	- SLAVKO MILING CLC TBR
3706	HENRY & DORIS MEYER CLC HRB RDS TBR WRA	3774	- K.H. MILKER ALT CLC GEN HRB OLG TBR WLD WRA
4803	HERMAN P MEYER CLC DRT FLE H2O TBR	6275	- DAVID MILL ALT CLC ECN TBR WRA
6852	SALLY C & FREDERICK MEYER CLC TBR	8131	- JANET MILLAR CLC HRB
430	L BRUCE MEYER, M D REC	2701	- LARRY MILLER CLC TBR
4445	AARON MEYERS CLC HRB	5861	- ALAN MILLER ALT CLC HRB OLG REC RNG TBR WLD WRA
7116	- GLORIA MEYERS ALT CLC ECN HRB OLG RNG TBR VIS WRA	9635	- ALISEN MILLER CLC OLG TBR WRA
5089	- GLORIA J MEYERS ALT CLC ECN OLG RNG TBR VIS WRA	8546	- BARBARA MILLER ALT CLC HRB OLG REC RNG TBR WLD WRA
10221	- GLORIA J MEYERS ALT CLC TBR WRA	10587	- BRENDA MILLER ALT CLC HRB OLG TBR WLD WRA
4454	- LEAH MEYERS CLC REC	9873	- BRENDA & NEIL MILLER ALT CLC HRB OLG TBR WLD WRA
4460	- LEAH MEYERS ALT CLC FLE HRB OLG TRL WLD	3169	- CAROL MILLER CLC HRB OLG RDS REC RNG TBR
10408	LINDA MEYERS ALT CLC TBR WRA	5195	- CAROL MILLER ALT CLC HRB OLG REC RNG TBR WLD WRA
3987	STEVEN MEYERS CLC		
3746	VICTOR MEYERS CLC H20 HRB LND OLG REC RNG TBR TRL VIS WIN		
3429	HOWARD MEYERSON CLC OLG TBR		
2841	A MEYL CLC FSH HRB TBR		
10216	SALLY LOUISE MEYNES ALT CLC TBR WRA		

7917	- DA MILLER CLC	8968	- MARILYN MILLET CLC HRB RDS RRG TBR
9305	- DA MILLER REC TBR VIS WRA	3742	- INGEY MILLETT CLC ECN HRB TBR VIS WRA
2543	- DENNIS MILLER ECN		
6853	- DONALD J MILLER. CLC TBR	3741	- JAMES MILLETT CLC ECN HRB TBR VIS WRA
2887	- DOROTHY M MILLER ALT CLC HRB OLG REC TBR WLD WRA	5204	- BRAI MILLIGON ALT CLC HRB OLG REC RRG TBR WLD WRA
8845	- EILEEN MILLER ALT CLC HRB OLG REC RRG TBR WLD WRA	10156	- VERNAN MILLO CLC
8577	- EMILY MILLER CLC ECN HRB TBR VIS WRA	8177	- AIMEE MILLS ALT CLC HRB OLG REC RRG TBR WLD WRA
9055	- ERIC E MILLER ALT CLC HRB OLG REC RRG TBR WLD WRA	320	- BARBARA MILLS GEN TBR VIS WRA
10636	- ERIC R MILLER ALT CLC HRB OLG REC TBR WLD WRA	9897	- BRETT D MILLS CLC
10416	- EVELYN MILLER CLC	10401	- JAY MILLS ALT CLC TBR WRA
6414	- FELICE MILLER ALT CLC ECN OLG RRG TBR VIS WRA	9383	- JENI MILLS ALT CLC TBR WRA
4139	- GEORGE MILLER CLC HRB WRA	4308	- PERRY MILLS ALT CLC HRB OLG RRG TRL WRA
2359	- GLENN & BARBARA MILLER CLC ECN HRB TBR	10225	- SUSAN MILLS ALT CLC TBR WRA
8094	- GLORIA JAN MILLER. ALT CLC HRB OLG REC TBR VIS WLD WRA	2737	- URSULA MILLS ALT CLC HRB OLG TBR WLD WRA
11617	- GREGORY MILLER CLC HRB WRA	7936	- KAY MILLS PAUGH ALT CLC ECN OLG RRG TBR VIS WRA
8043	- JARO MILLER ALT CLC ECN OLG RRG TBR VIS WRA	1703	- CYNTHIA L MILUK CLC ECN H2O HRB TBR TRL VIS WRA
455	- JIM MILLER OWLTBR	7104	- BUTCH MINE ALT CLC HRB OLG REC RRG TBR WLD WRA
4733	- JIM MILLER CLC ECN HRB TBR VIS WRA	3150	- JEROD MINE, CLC HRB
5343	- JIM MILLER. ALT CLC ECN OLG RRG TBR VIS WRA	9683	- MARK MINE ALT CLC TBR WRA
11135	- JIM MILLER. CLC ECN GEN TBR	4741	- TOM MINGEE. CLC FSH GEN TBR VIS WLD
58	- JOHN MILLER ALT CLC HRB RRG WRA	10093	- CATHY MINICK ALT CLC ECN OLG RRG TBR VIS WRA
95	- JOHN MILLER CLC HRB OLG RRG TBR	3819	- DON MINICK CLC
3471	- JOHN MILLER ALT CLC HRB OLG REC RRG TBR WLD WRA	3819	- MARY LOU MINICK CLC
3965	- LAURIE MILLER. CLC HRB RRG	10098	- MARY LOU MINICK ALT CLC ECN OLG RRG TBR VIS WRA
7883	- LAURIE MILLER. ALT CLC ECN OLG RRG TBR VIS WRA	9143	- SHINA MINKLE. HRB TBR
8911	- LAURIE MILLER, ALT CLC ECN OLG RRG TBR VIS WRA	5016	- BARBARA MINNEMAN CLC ECN HRB TBR VIS WRA
3710	- LAWRENCE MILLER ALT CLC TBR WRA	5584	- NINA MINOFF ALT CLC HRB OLG REC RRG TBR WLD WRA
9732	- LOIS MILLER ALT CLC ECN OLG RRG TBR VIS WRA	7780	- R MINOR. CLC H2O HRB REC TBR VIS
8439	- LYNDIA MILLER CLC GEN HRB OLG RDS RRG TBR	1036	- MARY MINTEY CLC ECN TBR WLD WRA
10445	- M S MILLER CLC H2O HRB REC TBR VIS	10659	- ELIZABETH MINTHORA. ALT CLC ECN OLG REC RRG TBR VIS WRA
10092	- MARY F. MILLER. ALT CLC ECN OLG RRG TBR VIS WRA	1037	- ELIZABETH B, MINTHORN. CLC REC TBR VIS
9465	- MAY & BOB MILLER ALT CLC HRB OLG TBR WLD WRA	9984	- JAMEE MINTO ALT CLC TBR WRA
10588	- NEIL MILLER ALT CLC HRB OLG TBR WLD WRA	6772	- JONAS MINTON. ALT CLC HRB OLG REC RRG TBR WLD WRA
5598	- PULORD MILLER ALT CLC HRB OLG REC RRG TBR WLD WRA	10191	- JASAN MINZER CLC TBR
8747	- RAY MILLER ALT CLC HRB RDS	6008	- GEORGIA MIODEOZEWSKI ALT CLC HRB OLG REC RRG TBR WLD WRA
3468	- RICHARD MILLER CLC HRB	10342	- S. MIRLES CLC HRB
425	- ROBERT A MILLER ECN TBR	864	- ANDREWG MIROV, M C REC WRA
5876	- SANDI MILLER. ALT CLC HRB OLG REC RRG TBR WLD WRA	4175	- KYRAN MISH CLC ECN OLG RDS TBR
4201	- STANTON MILLER CLC	4337	- CAROL MISQUEZ REC WRA
1354	- STUART MILLER CLC HRB WRA	11853	- MADELINE & HENRY MISROCK ALT CLC H2O HRB VIS WLD
6595	- TRACEY A MILLER CLC HRB REC VIS WLD	8443	- MR & MRS HENRY MISROCK. CLC DRT GEN HRB RDS TBR VIS
9739	- W D MILLER ALT CLC ECN OLG RRG TBR VIS WRA	8878	- A C MISSIONE CLC H2O HRB REC TBR VIS
11011	- MICHELE MILLER, ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	10169	- TRISTAN M MITAL CLC TBR WLD
5736	- JAMES M MILLER, DDS REC WRA	3678	- MARGIE I MITCHEEL CLC RDS TRL VIS WRA
3975	- LANI MILLER-JONES ALT CLC HRB OLG REC RRG TBR WLD WRA	9956	- KEVIN MITCHEL CLC GEN HRB TBR
		10876	- MITCHELL CLC FLE TBR
		4721	- ALLISON MITCHELL CLC
		827	- BROOKS MITCHELL ECN GEN LND RRG TBR WRA

7073	- CATHERINE MITCHELL ALT CLC ECN H2O OLG RNG TBR VIS WRA	10250 11067	- MICHAEL P MONASKY, ALT CLCTBR WRA
6853	- CHARLENE MITCHELL' CLC TBR	737	- NELSON MONEY ECN GEN REC TBR WRA
11336	- CHET MITCHELL ECN OWLTBR WLD	736	- BILLI MONIZ ECN TBR
811	- CLIFFORD MITCHELL ECNTER	739	- BRUCE D MONIZ TBR
9395	- DAN N MITCHELL ALT CLC TBR WRA	3399	- BRUCE D MONIZ TBR
2090	- EDWARD E MITCHELL CLC ECN HRB TBR VIS WRA	4380	- LOIS MONLIN ALT CLC HRB OLG REC RNG TBR WLD WRA
11094	- JACKIE MITCHELL. TBR	4412	- BONNIE MONNIN ALT CLC HRB OLG TBR WLD WRA
7081	- MARIA MITCHELL' ALT CLC ECN OLG RNG TBR VIS WRA	10711	- DELLA MONROE CLC ECN HRB RDS RNG TBR WRA
2283	- MR & MRS KELLEY MITCHELL' CLC ECN FLE HRB OLG RDSTER	169	- SARA MONSER ALT CLC TBR WRA
3400	- PATRICIA MITCHELL' CLC TBR	536	- CARA & ROBERT MONSON CLC RECTBR
5571	- TRENT MKCHELL. ALT CLC HRB OLG REC RNG TBR WLD WRA	2394	- ROBERT E MONSON CLC H2O VIS
9225	- WILLIAM J MITCHELL' CLC FSH H2O LND RDS RNG TBR WLD WSR	3160	- ROBERT E & CARA MONSON ALT HRB WAYNE MONSON. CLC
3406	- WILSON MITCHELL' CLC ECN FAC HRB MIN PLN RNG TBR VIS	11247	- MONTY E MONTAGE CLC ECN FSH GEN OLG TBR WLD
8599	- HEIDI G. MITCHELL & NANCY MULLIGAN CLC HRE TBR	3959	- CINDY MONTAGUE CLC H2O HRB OLG REC RNG TBR VIS WRA
3992	- ANN-MARIE MITROFF CLC ECN HRE OLG REC	10236	- JENNIFER L MONTAGUE ALT CLC TBR WRA
7807	- JANET MITTAMMER' ALT CLC TBR WRA	6553	- KATHRYN L MONTAGUE CLC TBR
1992	- CHERYL L MLAKAR ALT ECN GEN	6459	- FRANCIS MONTALBAN TBR
2025	- RON MLAKAR. ALT ECN GEN	3327	- CINDY MONTAQUE CLC GEN H2O HRB RDS REC RNG TRL VIS
1309	- MLEKIAN ALT CLC ECN HRB OLG REC TBR VIS WLD	7143	- ARNOLD MONTEIRO ALT CLC ECN OLG RNG TBR VIS WRA
7340	- JEANNIE MOBERLY ALT CLC TER WRA	5472	- BRIDGETTE MONTGOMERY. ALT CLC ECN OLG RNG TER VIS WRA
7317	- EN J MOE ALT CLC TBR WRA	59	- FRED MONTGOMERY CLC HRB TBR
2803	- TED A MOCIUM ALT CLC HRE OLG TBR WRA	499	- JOHN MONTGOMERY CLC
1698	- J MOCIUM' CLC ECN HRB TBR VIS	9930	- LOWELL MONTGOMERY. CLC GEN HRB TBR
2485	- J MOCIUM CLC ECN HRB REC WRA	5140	- PETER MONTGOMERY ALT CLC HRB OLG REC RNG TBR WLD WRA
6527	- E MOCREANG: ALT CLC ECN OLG REC RNG TBR VIS	2518	- MARIANA MONTGOMRE & M TAKA ALT CLC HRE OLG TBR WLD WRA
10270	- CRYSTAL D M ALT CLC TBR WRA	2842	- SUSAN MOMRONI. CLC ECN TBR
3227	- JOHN MODIN. ALT HRB OLG TBR WLD WRA	1847	- PIERRETTE MONTROY ALT CLC OLG RDS
7500	- LISA MOEDY' ALT CLC HRB OLG REC RNG TBR WLD WRA	1660	- SUE MONZE. CLC WSR
20500	- RICE MOFOYOSKI. TRL	1691	- EDWINA MOODY CLC HRB OWLTBR TRL WLD WRA
9806	- M F. MOGENGEGE CLC GEN OLG TBR WRA	6981	- ELIZABETH MOODY ALT CLC ECN OLG RNG TBR VIS WRA
9600	- HEATHER A. MOQHER. ALT CLC TBR WRA	9004	- KATE MOODY' ALT CLC HRE OLG REC RNG TER WLD WRA
2981	- C. MOHAN CLC RDS TBR	6733	- MARILYN J. MOODY REC VIS
5988	- CAITLIN MOHAN' ALT CLC HRB OLG REC RNG TBR WLD WRA	10762	- MICHAEL MOODY. ALT CLC FSH LND OLG REC TBR VIS WRA
12036	- CAITLIN MOHAN' OLG VIS WLD WRA	4165	- JOHN MOOK: ALT CLC TBR WRA
2993	- TED H MOHLER. TBR	886	- ANNE IRENA MOON' CLC OLG TBR WRA
11183	- BARBARA MOHR CLC GEN H2O HRB OLG RDS RNG TBR TRL	9869	- BODHI MOON ALT CLC ECN HRB TBR VIS WRA
10356	- DANYA MOHR TBR	8244	- DEBORAH MOON ALT CLC OLG TBR WRA
10355	- KATHY MOHR ALT CLC HRB WRA	1315	- JEREMY MOON CLC ECN GEN REC TBR WRA
4899	- TARA MOHR ALT CLC HRB OLG REC RNG TBR WLD WRA	3214	- PATRICIA M MOON CLC FSH HRB LND OLG RDS RNG TBR TRL
5708	- TERRY MOHR. ALT CLC HRB TBR VIS WRA	7049	- MARY JEANNE MOONEY ALT CLC TBR WRA
3326	- VERNON MOHR ALT CLC HRB OLG TBR WLD WRA	4750	- ANDY MOORE CLC
8898	- MARY L MOJAR. ALT CLC ECN OLG RNG TER VIS WRA	10749	- ANNA MOORE ALT CLC TBR WRA
2591	- HOWARD MOLITCH ALT CLC	2276	- BARBARA MOORE ALT CLC H2O HRB LND OLG RDS REC RNG TER TRL VIS WLD WRA
10987	- LANE MOLLER ALT CLC ECN FSH H2O HRE SNP TBR TRL WLD WRA	2416	- BARBARA MOORE ALT CLC
5482	- DEBBIE MOLONEY. ALT CLC ECN OLG RNG TBR VIS WRA	4840	- BEAKE MOORE ALT CLC HRB OLG REC RNG TBR WLD WRA

2204	- BROOKE N. & LINDAE MOORE CLC FLE GEN H2O HRB OLG TBR TRL WLD WRA	584	HELENE & H STEWART MOREDOCK REC BECKY ORD ALT CLC ECN OLG RNG TBR WRA
6794	- CHAF. E MOORE ALT CLC HRB OLG REC RNG TBR WLD WRA	5650	DAVID E M CLC TBR BERNADETTE MORGAN ALT ECN GEN MORGAN CLC TBR TRL WRA
9082	- CHARLENE MOORE ALT CLC TBR WRA	6852	CECIL MORGAN ALT CLC ECN OLG RNG TBR VIS WRA
20509	- CRAIG MOORE TBR	2009	CHANTELL MORGAN ALT CLC ECN OLG RNG TBR VIS WRA
20515	- CRAIG MOORE TBR	444	CLARA MORGAN OLG TBR WRA DARRELL MORGAN ALT CLC GEN
2807	- DAWNE J MOORE CLC	10123	DAVID MORRIS ALT CLC HRB OLG REC RNG TBR WLD WRA
3228	- DENNIS MOORE ECN TE	10106	DELORES F MORGAN CLC TBR ELLEN MORGAN ALT CLC ECN OLG RNG TBR VIS WRA
5009	- DON MOORE TBR	4788	GEOFFREY MORGAN ALT CLC HRB OLG TBR WLD WRA
6011	- ELIZABETH MC MOORE ALT CLC OLG RNG TBR VIS WRA	2467	Y MC MORGAN ALT CLC HRB OLG TBR WLD WRA
2258	- FELICIA MOORE ALT CLC HRB OLG TBR WLD WRA	9029	JAMES MORGAN CLC DRT ECN FLE FSH H2O HRB RDS MORGAN ALT CLC HRB WLD WRA
1579	- FRANK L MOORE TBR	6852	JANETH MORGAN ALT CLC HRB WLD WRA
3500	- GLENN MC MOORE CLC	8277	JOHN MORGAN ALT CLC HRB OLG REC RNG TBR WLD WRA
1825	- JACK E MOORE ALT	3337	MARGIE MORGAN ALT CLC HRB MARTIN MORGAN ALT ECN GEN
3306	- JAMES MOORE ALT CLC ECN HRB OLG REC TBR WLD WRA	3915	MR & MRS. JAMES MORGAN CLC HRB RNG
2671	- JOAN G MC MOORE ALT CLC OLG TBR WRA	3718	PATRICK MORGAN ALT ECN GEN RICK MORGAN TBR VIS
2866	- JOAN G MC MOORE ALT CLC ECN GEN HRB WLD WRA	8068	STEPHAN MORGAN ALT CLC ECN OLG RNG TBR VIS WRA
44	- JOE & GWEN MOORE ALT HRB TBR	9831	VIRGINIA MORGAN ALT ECN GEN ERIC MORLOCK CLC HRB WLD
9253	- JOE K MOORE ALT DRT FLE H2O HRB LND OLG OLG REC RNA RNG SIA SNF TBR TRL VIS WIN WRA	8770	FRANCIS R MORODOMI ALT CLC HRB OLG REC TBR WLD WRA
6883	- JOSHUA MOORE CLC OLG TBR WRA	1282	AMY S MORRIS CLC ECN HRB TBR VIS WRA
8227	- JUNE MOORE CLC TBR	2465	CHESTER MORRIS GEN DEAN MORRIS ECN REC TBR
2207	- MARI J MOORE ALT CLC HRB	3279	DON & MARYL MORRIS ALT DRT ECN FLE HRB LND OLG RDS RNG TBR TRL WLD WRA
5415	- MARIAN N MOORE CLC HRB RNG WRA	1985	JANET MORRIS ALT CLC TBR WRA JUDY A MORRIS ALT CLC ECN GEN OLG RNG TBR VIS WRA
3347	- MEGANNE MOORE CLC ECN HRB OLG TBR	4442	LAURINE MORRIS ALT CLC ECN OLG RNG TBR VIS WRA
2791	- MICHAEL MOORE TBR	6391	MARK MORRIS ALT CLC HRB OLG REC RNG TBR WLD WRA
1507	- PETE MOORE ECN TBR	1987	MELVIN MORRIS ECN TBR RICHARD A MORRIS CLC TBR
6881	- RAY MOORE CLC HRB	9889	RICK SD MORRIS ALT CLC ECN OLG RNG TBR VIS WRA
7236	- ROBERT W MOORE ALT CLC HRB OLG TBR WLD WRA	3258	ROBERT MORRIS ALT CLC ECN OLG RNG TBR VIS WRA
2460	- ROXIE MOORE ALT ECN GEN WRA	2091	SARA MORRIS ALT CLC ECN OLG RNG TBR VIS WRA
10854	- SAIRAM MOORE CLC TBR	2987	SUZANNE MORRIS ALT CLC ECN OLG RNG TBR VIS WRA
1903	- SHERRY MOORE ECN GEN TBR	1520	TED A MORRIS ALT CLC ECN OLG RNG TBR VIS WRA
6337	- STEPHEN MOORE ALT CLC ECN OLG REC RNG TBR VIS WRA	4242	HELEN MORRISON ALT CLC TBR WRA DANIEL MORRISON ALT CLC TBR WRA MARILYN MORRISON ALT CLC ECN OLG RNG TBR VIS WRA
6515	- STEVEN MOORE ALT CLC HRB OLG REC RNG TBR WLD WRA	7338	
9136	- TAMMY MOORE ALT CLC HRB OLG TBR WLD WRA	7935	
8680	- WILBERT MOORE ALT CLC ECN OLG RNG TBR VIS WRA	7722	
7408	- SIERRA MOORES ALT CLC ECN OLG RNG TBR VIS WRA	5141	
6270	- JANY MOORWOOD ALT CLC HRB OLG TER WLD WRA	3139	
2585	- PAUL MOOSMAN CLC	6852	
1053	- MICHAEL MORA ALT CLC ECN HRB REC RNG TBR WRA	8785	
1727	- VICTORIA MORA CLC ECN HRB TBR VIS WRA	7412	
7305	- VICTORIA MORA ALT CLC ECN OLG RNG TBR VIS WRA	7407	
7646	- PATRICIA MORALES ALT CLC TBR WRA	9110	
1785	- BEVMORAN CLC	10144	
5990	- CHRIS MORAN ALT CLC HRB OLG REC RNG TBR WLD WRA	4662	
10157	- COLLEEN MORAN CLC TBR VIS WLD	6136	
11509	- JOHN MORAN CLC DRT HRB	9199	
8153	- MARK JAMES MORE ALT CLC HRB OLG REC RNG TBR WLD WRA		

879	TEVIS MORRISON ECN TBR	7767	- MT VISIONS, INC ALT CLC HRE OLG REC
2784	TINA MORRISON TBR		RNG TBR WLD WRA
2050	RICHARD H MORSETH TBR	4024	- TERRENCE MUECK ALT CLC HRB OLG
3308	JOHN MORT CLC ECN H2O OLG VIS WLD		REC RNG TBR WLD WRA
3955	- JOHN MORT CLC ECN GEN OLG	4189	- BARBARA MUELLER REC
3150	- RICK MORT CLC HRB	5036	- CHRISTINE MUELLER ALT CLC HRB OLG
5870	- L MORTENSEN ALT CLC HRB OLG REC		REC RNG TBR WLD WRA
	RNG TBR WLD WRA	7444	- DOROTHY MUELLER ALT CLC HRB OLG
5871	- MARK MORTENSEN ALT CLC HRB OLG		REC RNG TER WLD WRA
	REC RNG TBR WLD WRA	6375	- KIM MUELLER ALT CLC HRB OLG REC
10341	- SHIRLEY MORTENSEN CLC		RNG TBR WLD WRA
3500	- T MORTH CLCTBR	5035	- L G MUELLER ALT CLC HRB OLG REC
3500	- JOHN MORTON CLC TBR		RNG TBR WLD WRA
4068	- MR & MRS MOSER CLC HRB OLG RDS	5996	- LAURENT G MUELLER ALT CLC HRB OLG
	TBR		REC RNG TBR WLD WRA
4144	- SUSAN MOSER CLC HRB OLG TBR WLD	4488	- MARTHA MUELLER CLC HRB LND RDS
	WRA		TBR
2101	- MOSER LUMBER, INC WALT H CHEELY	1338	- ROBERT F MUELLER CLC FSH H2O RDS
	GEN TBR		RNG WLD
6708	- MR & MRS ROBERT MOSES CLC ECN	7417	- GWENDOLYN MUFFER ALT CLC HRB OLG
444	- ROLAND & RUTH MOSES CLC TBR TRL		REC RNG TBR WLD WRA
	WRA	3819	- GORDON MUIAY CLC
3361	- HEATHER MOSHER GEN	3819	- LINDA MULAY CLC
3786	- JENNIFER MOSHER ALT CLC HRB OLG	6049	- PATRICK MULCAHY ALT CLC ECN OLG
	REC RNG TBR WLD WRA		RNG TBR VIS WRA
11956	- MADELINE MOSHER CLC	10368	- JANE MULDER ALT CLC ECN FLE GEN
2745	- MADELINE J MOSHER CLC TBR		H2O HRB OLG REC RNG TBR TRL VIS WIN
1859	- LEROY MOSLEY GEN		WLD WRA WSR
9501	- DON MOSMAN CLC REC WRA	2853	- TERRY MULDOON' CLC TBR
3366	- ANDREA MOSS CLC RDS TBR	5271	- NANCY MULDOORE ALT CLC ECN OLG
3844	- ANDREA MOSS CLC RDS TBR WLD		RNG TBR VIS WRA
9021	- FREDERICKS MOSS' ALT CLC ECN OLG	9201	- STEWART F MULFORD ALT CLC HRB
	RNG TBR VIS WRA		OLG REC RNG TBR WLD WRA
397	- DENA MOSSAR CLC TBR	6934	- NORMA J MULKIE ALT CLCTBR WRA
4031	- MARTY MOSSMAN' CLC FLE GEN OLG	16	- BRYANNEMULLAN OLG
	TBR	19	- HOLLY MULLAN CLC
8947	- MICHAEL MOTARIAND ALT CLC HRB LND	124	- MALIA MULLAN CLC
	OLG REC RNG TBR WLD WRA	7907	- DRU MULLER ALT CLC ECN GEN OLG
63	- MOTHER LODGE MINERS STEVE M HAGAR		RNG TBR VIS WRA
	GEN LND	10577	- NANCY MULLIGAN CLC
1204	- MOTOROLA KENNETH J MCAVOY TBR	10117	- PAMELAS MULLIGAN ALT CLC ECN OLG
6843	- A E MOTT, D C ALT CLC HRB OLG REC		RNG TBR VIS WRA
	WLD WRA	6233	- JOAN MULUNS ALT CLC HRB OLG REC
10702	- JAMES S MOTT-SMITH ALT CLC TBR WRA		RNG TBR WLD WRA
6344	- PHYLISS MOTTOLA HRB OLG REC RNG	3150	- PATRICK MULLINS CLC HRB
	TBR TRL VIS WIN WLD WRA	7521	- DAN MUMK. ALT CLC HRB OLG REC RNG
4287	- SITA MOTYKA ALT CLC HRB OLG REC		TBR WLD WRA
	RNG TBR WLD WRA	7926	- EOB MUMM CLCTBR
1412	- SITA CAROL MOTYKA' CLC FLE GEN HRB	9348	CAROLYN W. MUMM. CLC ECN HRB REC
	RECTRL WRA		TBR WRA
1411	- STEWART MOTYKA CLC REC	8257	RITA D MUMPER ALT CLC HRB OLG REC
2801	- ROSEMARY MOTZ, D C ALT CLC HRB		RNG TBR WLD WRA
	OLG RDS REC RNG TBR WLD	8256	WILLAM H MUMPER ALT CLC HRB OLG
5181	- JEWELL V MOUDINO ALT CLC ECN OLG		REC RNG TBR WLD WRA
	RNG TBR VIS WRA	11139	KARL MUNDT CLC ECN TBR
7394	- WELLS MOUNDAIF CLC OLG TBR WRA	2459	MARY MUNK ALT ECN GEN
2487	- DONALD B MOUNT ALT CLC HRB OLG	1001	MUNNELL & SHERRILL INC THOMAS SIMS
	REC TBR TRL WRA		ECN TER
10049	- MONNIE MOUNT CLC GEN HRB TBR	9390	GINA L MUNRO ALT CLC TBR WRA
7787	- MOUNTAIN LION COALITION SHARON	3646	THOMAS & JOY T MUNRO CLC
	NEGRI CLC ECN LND RDS RNG TBR WLD	10047	RANEE MUNROE CLC GEN HRB TBR
8844	- MIKE MOWEN ALT CLC HRB OLG REC	2832	WARREN A MUNSON ALT CLC REC
	RNG TBR WLD WRA	4299	DREW MUNSTER ALT CLC ECN OLG RNG
850	- JUAN MOYA ECN TBR		TBR VIS WRA
2175	- CHARLOITE MOYER ALT HRB RDS WSR	5173	HELEN MURAOKA ALT CLC ECN OLG
10179	- TIM MOYHOW ALT CLC TBR		RNG TBR VIS WRA
3633	- ROBERT & GERALDINE MOYLE CLC HRB	5172	RICHARD T MURAOKA ALT CLC ECN OLG
5257	- FRANCESMOZZEIJ ALT CLC HRB OLG		RNG TBR VIS WRA
	REC RNG TBR WLD WRA		

8201	- STEPHEN MURATORE. CLC HRE TER WRA	513	- HERMAN B NACHTMAN TER
3999	- PAMELA MURAWSKI' CLC H2O HRE REC TER WRA	9322	- D M NAFTON CLC H2O HRE REC TER VIS
11728	- PAMELA MURAWSKI CLC HRE TER	7949	- LISA NAGEL ALT CLC ECN OLG RNG TER VIS WRA
6473	- ALICE MURDOCK ALT CLC HRE OLG TER WLD WRA	4071	- MARKWELL NAGER & PAULETTE RHOADES ALT CLC HRB OLG TER VIS WLD WRA
8435	- EOB MURPHY CLC HRB TER WRA	3064	- CAROLYN NAGLE TBR
6108	- CAROL MURPHY ALT CLC TBR WRA	3330	- CHRIS NAGLE CLC
1285	- CATHERINE MURPHY. ALT CLC GEN HRE REC RNG TER TRL WRA	3063	- GARYC NAGLE ECNTER
5169	- DOUG MURPHY ALT CLC ECN OLG RNG TBR VIS WRA	3065	- GARY G. NAGLE TER
3398	- FRANK MURPHY ALT	3066	- JULIE NAGLE. GEN
10664	- FRANK MURPHY ALT CLC ECN OLG RNG TER VIS WRA	5231	- TYSON NAGLER. ALT CLC HRE OLG REC RNG TER WLD WRA
6205	- JUDY MURPHY ALT CLC ECN OLG RNG TER VIS WRA	6156	- CONNER NAKANEIC CLC OLG REC TBR
5170	- LINSEY MURPHY ALT CLC ECN OLG RNG TER VIS WRA	4342	- TERESA NAKAYAMA. CLC H2O HRE RDS RNG TBR TRL WLD
11716	- MICHAEL MURPHY GEN	9819	- MELANY NAKOGRIL CLC ECN HRE TER VIS WRA
10666	- VICKIE MURPHY ALT CLC HRE OLG REC RNG TBR WLD WRA	11306	- NALINI'CLC
10992	- SCOTT MURPHY ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	8761	- JOHN S NASH ALT CLC ECN OLG RNG TER VIS WRA
2051	- MURPHY PLYWOOD CORP ROBERT W. FORAN ECNTER	8758	- SALLY J NASH. ALT CLC ECN OLG REC RNG TER VIS WRA
530	- JOSEPH F MURPHY, ATT-AT-LAW, CLC	10865	- SHANNAN NASH CLCTER
11544	- JUDITH MURPHY, M D . CLC HRE TER	6960	- MARTIN NASS ALT CLC HRB OLG REC RNG TER WLD WRA
5497	- CORALEE MURRAY ALT CLC HRB OLG REC RNG TER WLD WRA	689	- NATTER FALLERSASSN BILL BAILEY ECN WRA
9464	- DARLYS P MURRAY ALT CLC HRB OLG REC RNG TER WLD WRA	9251	- NATIONALAUDUEON SOCIETYGLENN OLSON. CLC DRT ECN FSH H2O HRE LND OLG OWL RDS REC RNA RNG SIA SNP TBR WLD WSR
6657	- FRED MURRAY ALT CLC ECN OLG RNG TER VIS WRA	8702	- NATURE CONSERVANCY STEVE MCCORMICK FSH OWL RNA SIA SNP TER WLD
6813	- GAVIN & MICHELLE MURRAY CLC TBR	9440	- CEUNA NAVARRO ALT CLC ECN OLG RNG TER VIS WRA
2537	- KEVIN MURRAY CLC OLG TER WRA	6616	- BRIDGET NAWROCKE TER
11005	- KATHERINE MURRAY ALT CLC ECN FSH H2O HRE SNP TER TRL WLD WRA	3229	- RENA NAWAR ALT CLC ECN HRE OLG REC RNG TBR WLD WRA
2083	- JACK MURRY TER	12213	- RENA NAWAR CLC ECNTER
5879	- MARY MURTY ALT CLC HRE OLG REC RNG TBR WLD WRA	3674	- HELEN NCNERNEY CLC WRA
10853	- DAMIEN MURTZ' CLC TBR	7989	- STACI NEAL' ALT CLC HRE OLG REC RNG TER WLD WRA
10745	- CHRIS MUSCI ALT CLC TE WRA	198	- O NEALER CLC HRE RDS REC TER
541	- MRS ILLA JOAN MUSEATH TBR	5242	- MICHELEE NEEB' ALT CLC HRB OLG REC RNG TER WLD WRA
8279	- JEFFERY MUSS ALT CLC ECN OLG RNG TBR VIS WRA	11525	- BONNIE L. NEEL' HRE
7881	- CHERI ALT CLC ECN HRB OLG RNG TBR VIS WRA	5972	- JOHN NEEL ALT CLC HRB OLG REC RNG TER WLD WRA
2210	- LEE MUTHER CLC ECN FLE RDS TBR	6583	- KELLY NEELEY' CLC ECN FAC HRE MIN PLN RNG TER VIS
2155	- TIM MYCZEK, CLC H2C REC RNG VIS V	1457	- BILL NEEP ECNTER
9929	- JIM MYER 'I GEN HRB TBR	11193	- JOHN NEFF ALT CLC HRB OLG REC RNG TBR WLD WRA
634	- BERNICE 'I TER	2536	- CLAIRE D NEGLE CLC OLG TER WRA
2031	- LUCILLE MYERS. ALT ECN GEN	10608	- DEAN E H CLC H2O HRE REC TER VIS
9552	- MR & MRS ROLANDA MYERS CLC H2O HRE REC TEA VIS	3519	- NANCY NEIDHARDT CLC OLG TER WRA
140	- PIETER S MYERS. ALT CLC DRT ECN H2O HRB OLG RDS REC RNG TER WIN WLD WRA	994	- DANIEL A NEIL TER
20500	- RICHARD MYERS. TRL	8185	- BOB NEIN ALT CLC HRE OLG REC RNG TER WLD WRA
5095	- SUSAN MYERS. ALT CLC HRB OLG REC RNG TBR WLD WRA	3204	- KA NEIVE CLC OLG TBR WRA
1483	- GEORGE MYRMO' TBR	1808	- DARRYL NELAN LND
3390	- N COLUMBIA SCHOOLHOUSE MICHAEL GETZ CLC ECN GEN HRB WRA	936	- ARTHUR C NELSON OWL TER
8233	- N E CA FOR WILDERNESS AL RODRIGUEZ CLC ECN HRB OLG OWL REC RNA RNG TBR TRL VIS WLD WRA	10082	- BRUCE NELSON ALT CLC ECN OLG RNG TER VIS WRA

11509	- CAROL JEANNE NELSON CLC DHT HRE	2875	- HARRIET NEWMAN CLC
6926	- CHARLES W NELSON ALT CLC TBR WRA	10567	- KRISTY NEWMAN CLC GEN HRB TER
7918	- DAVID G NELSON CLCTER	8713	- R G NEWMAN CLC
7390	- ERIK NELSON CLC OLG TBR WRA	1151	- HEATHER E NEWTON REC
5719	- IRENE A NELSON CLC HRE TER	932	- ROBERT NEWTON ECN GEN WLD
2960	- JOHN S NELSON ALT CLC HRB OLG TER WLD WRA	1145	- CHARLOTE A NEYLAND CLC ECN GEN HRB LND OLG RDS RNG TBR TRL WLD
3921	- LUCKY NELSON CLC H2O HRE RDS REC TRL WLD	3874	- CHARLOTTE A NEYLAND ALT CLC HRE OLG RDS TBR WLD WRA
10612	- M A T T NELSON CLC H2O HRB REC TBH VIS	2329	- AIMEE NG' ALT CLC HRB OLG RDS TBR VIS WLD WRA
3003	- MRS LUCKY NELSON ALT CLC H2O HRE RDS REC TER WLD	6986	- SHARON NG ALT CLC HRE OLG REC RNG TBR WLD WRA
6530	- P NELSON ALT CLC ECN GEN OLG RNG TER VIS WRA	9030	- WANDA L NG ALT CLC ECN HRB OLG REC RNG TER VIS WLD WRA
1124	- STAN NELSON TER	7365	- KAYWANNIAZI' CLC OLG TER WRA
7959	- TIMOTHY NELT ALT CLC TER WRA	5808	- AMY NICHOLAS ALT CLC ECN OLG RNG TBR VIS WRA
528	- NEOLIFE CHRIS QUINN CLC HRE RNG TBR WRA	1031	- GLEN NICHOLLS ALT CLC WRA
2037	- JEFF NEFA ALT ECN GEN	3500	- KEN NICHOLLS CLC TER
820	- FRANKNERUW ECNTBR	1308	- VERNA NICHOLS TBR
9296	- J NETHERWOOD CLC HRB RNG TER	10444	- VERNA NICHOLS CLC H2O HRE REC TER VIS
8851	- SAMUEL G NETHESKY ALT CLC HRE OLG REC RNG TBR WLD WRA	3134	- JESSICA NICHOLSON, CLC FLE TBR
8852	- DEBORAH NETLAND, CLC TER	6949	- JENNIFER E NICKE ALT CLC TBR WRA
2384	- RODNEY M NEU ECNTBR	1675	- MARVIN NICKEL GEN
3618	- MIKE & KIMETTE C NEUFELD, RDS REC TBR WRA	1458	- CAROL NICKELS, TBR
11269	- NEVADA COUNTY BUSINESSASSN RICH KUHN GENPLN	10022	- KRISTI NICKERSON CLC GEN HRB TBR
2301	- NEVADA COUNTY FISH & WILDLIFE COM- MISSION KENNETH E BAKER' CLC HRB RDS TER WLD	674	- NICKERSON LUMBER PLYWOOD ROBERT A. LOPEZ
3747	- NEVADA CO RESOURCE CONSERVATION DISTRICT CHAUNCEY POSTON CLC DRT FLE HRB H2O TER WLD	2104	- NI CKERSON LUMBER PLYWOOD ROBERT A LOPEZ ECN GEN TBR
8675	- NEVADA CO BOARD OF SUPERVISORS CRAWFORD BOST' ALT CLC ECN REC TER VIS WLD	1807	- PAUL NIC ECN EN LN
112w	- NEVADA CO CHAMBER OF COMMERCE CAROLE Q PETERS, ECN GEN REC TER VIS	11270	- JAMES F NICKLOS C H2O HRB LND R' C TBR WRA
11315	- NEVADA CO CHAMBER OF COMMERCE CAROLE Q PETERS' CLC REC VIS	2287	- HARRY N NIEE JG
11314	- NEVADA IRRIGATION DISTRICT JAMES P. CHATIGNY, H2O LND WRA	1205	- CHERYL J NIEI REF, ECN GEN LND C TER
3161	- ARMANDO NEVAREZ TBR	10623	- ORA NIEGEL CLC H2 HRB REC TBR VIS
10046	- JACK NEWBERRY, CLC GEN HRE TBR	5184	- BARBARA NIELARTY ALT CLC ECN OLG RNG TBR VIS WRA
2593	- HENRY & JENNY NEWBURGH; CLC OLG TER	10580	- LAUREL DIANE NIELSEN' ALT CLC GEN HRB HST OLG RDS TBR TRL VIS
8472	- NEWCASTLE AREA BUSINESS PETE KAUFF- MAN, CLC ECN GEN TER	3967	- RANDI NIELSEN ALT CLC HRE OLG TER WRA
491	- ALAN R NEWCOMB ECN GEN TER WRA	4179	- THORKILD NIELSEN ALT CLC HRB OLG TBR TRL WLD WRA
558	- ALAN R NEWCOMB ECN GEN TBR WRA	8769	- KATHRYN NIELSON, ALT CLC ECN OLG RNG TER VIS WRA
6178	- DIANNE NEWELL ALT CLC HRE OLG REC RNG TER WLD WRA	8026	- MARK D. NIELSON ALT CLC ECN OLG REC RNG TER VIS WRA
20002	- JAMES NEWELL REC TRL	8286	- TRACY NIELSON ALT CLC ECN OLG REC RNG TBR VIS WRA
10210	- MARK D NEWELL, ALT CLC TBR WRA	2331	- NIEMAN-REED LUMBER CO ROBERT M NIEMAN ALT TBR
4941	- KARAN NEWERY ALT CLC ECN OLG RNG TBR VIS WRA	7687	- EDNA NIES CLC OLG TBR WRA
9922	- ERICK NEWHARTT CLC GEN HRE TBR	7686	- MRS DAN NIES CLC OLG TER WRA
4933	- DOROTHY NEWKIRK ALT CLC ECN OLG RNG TBR VIS WRA	2909	- ERICK L NIGH ALT CLC ECN HRB OLG TER WLD WRA
5112	- DENISE NEWMAN ALT CLC HRB OLG REC RNG TER VIS WLD WRA	317	- CAROL NIGHTINGALE CLC HRE TBR WRA
		4902	- REGINA NIGRO ALT CLC ECN OLG RNG TER VIS WRA
		1937	- L E NIIHITFIELD REC
		7852	- KEVIN NIKULA ALT CLC TBR WRA
		8624	- SUSANS NIMICK REC WRA
		9842	- ERIC NINGELDEIN ALT CLC TER WLD WRA

1512	• MICHAEL G NISHEH TER	11479	• ANN NOON' GEN
4393	• JEANNIE NITTA CLC HRE RDS REC TER VIS	5866	• LYNTHA NOONAN ALT CLC HRB OLG REC RNG TBR WLD WRA
2265	• LEONARD NIX TER	8085	• SYNTHA NOONAN ALT CLC TER WRA
3500	• PATRICIA & JIMMY NIX CLC TER	1830	• NOREURY LOGGING WILLIAM NOREURY ECN
6730	• GEORGE NIXON CLC REC	2596	• WARREN H NORD CLC TER WRA WSR
e699	• MARIA J NIXON ALT CLC ECN OLG RNG TBR VIS WRA	9693	• GEORGE NORDSTRAN ALT CLC TER WRA
10739	• DENISE NLOCK CLC OLG TER WRA	9694	• PATRICIA NORDSTRAN ALT CLC TER WRA
6621	• NORTHERN CA COUNCIL FEDERATED FLY FISHERS RICHARD SZMIRIAN CLC DRT FSH H2O LND RNG TER WLD	4986	• ERNA R NORE CLC HRE REC TER VIS WRA
9290	• NORTH STATE WILDERNESS COM STEVEN L EVANS	4198	• EUCKNORLEN CLC
3441	• NORTH TAHOE SNOW TRAVELERS KEN WALLACE REC TRL WIN	1655	• KNORMAN CLCWRAWRSR
74	• TED NOACK ALT CLC HRE OLG TER	5752	• GASTON NORMAND ALT CLC ECN OLG RNG TER VIS WRA
10696	• JAMES L NOAK ALT CLC ECN OLG REC RNG TER VIS WRA	1222	• HAZEL NORRIS' GEN
2055	• GENE NOBLE TER	9925	• KARAN NORRIS CLC GEN HRE TER
1252	• JOHN W NOBLE CLC GEN RDS REC TER WRA	7640	• PATRICE J NORRIS ALT CLC TER WRA
1491	• JON E NOBLE TER	4799	• AMY NORTH ALT CLC HRE OLG TER WLD WRA
738	• WILBERT E NOBLES' OWL TER	3695	• NORTH FORKASSN DAVID MANN. LND RDS REC RNG TRL WIN WRA
6997	• DEANNE NOEL ALT CLC HRE OLG REC RNG TER WLD WRA	6568	• NORTHSTAR AT TAHOE H.C. SCHWARZ CLC ECN LND REC WIN
7234	• DEANNE NOEL ALT CLC ECN HRE OLG REC TER WLD WRA	6569	• NORTHSTAR ALICIA SCHWIND ALT CLC HRE OLG REC TER WLD WRA
2261	• ERIN NOEL ALT CLC GEN HRE OLG TER WLD WRA	761	• BILLY NORTON TER
616	• LEON F. NOEL GENTER	773	• JIMMY E NORTON ECN TBR
9033	• MATT NOEL ALT CLC HRE OLG REC RNG TER WLD WRA	7641	• THEA NORUM ALT CLC TBR WRA
7235	• PAUL NOEL CLC RDS TER	9101	• WONNE NOTARO ALT CLC ECN OLG RNG TER VIS WRA
11101	• PAUL NOEL CLC WRA	6143	• KAREN NOTSUND ALT CLC TER WRA
4854	• MICHAEL NOFSINGER ALT CLC HRE OLG TER WLD WRA	2659	• NOVA FOREST PROD CO LARRY MARKEY TER
5029	• MICHAEL NOFSINGER ALT CLC HRE OLG REC RNG TER WLD WRA	3200	• GLENN NOVAK GEN OWL TER
7626	• CHRISTINE J. NOI ALT CLC TER WRA	3088	• JOE NOVAK ECN GENTER
10323	• AUDREY NOKES' ALT CLC HRE OLG REC RNG TER WLD WRA	10692	• JOHN E. NOVAK ALT CLC ECN OLG RNG TER VIS WRA
4383	• ELEANOR NOLAN ALT CLC HRE REC	7868	• PHYLLIS NOVAK ALT CLC HRE OLG REC RNG TER WLD WRA
4406	• JOHN NOLAN CLC FLE HRB TER WLD	9976	• NAN NOVIS ALT CLC TER WRA
7216	• JOHN NOLEN ALT CLC HRB OLG REC RNG TER WLD WRA	3659	• ARLENENOW TER
1697	• DEANNE NOLL CLC ECN HRB O TER VIS WRA	11616	• ARLENE NOW CLC
e679	• KIM NO ALT CLC ECN OLG RNG TER VIS WRA	6373	• JAMES NOWEL ALT CLC HRE OLG REC RNG TER WLD WRA
9034	• PAUL NOLL ALT CLC HRE OLG REC RNG TBR WLD WRA	6575	• BARBARA NOXON ALT CLC HRE OLG TER WLD WRA
4675	• FRED NOLLANDEI ALT CLC TBR WRA	6574	• CLARENCE E. NOXON ALT CLC HRE OLG TER WLD WRA
244	• ANNE M. NOLLER AIR CLC ECN H2O HRE TER	11945	• MR & MRS C NUFER CLC
2267	• ROBERT D NOLLER ECN TER VIS	3094	• TOM NUFL ALT ECN GEN
3415	• MARK NOLZ CLC OLG TER WRA	9932	• BRIAN NUFRENT CLC GEN HRE TER
5739	• SANDRA NOMER ALT CLC ECN GEN OLG RNG TBR VIS WRA	3988	• HENRY NULZUK ALT CLC HRE OLG TER WLD WRA
7739	• WOODY NONCE ALT CLC ECN OLG RNG TBR VIS WRA	7535	• JERI NUMES ALT CLC HRE OLG REC RNG TER WLD WRA
11802	• DONNI NONNEKMAI CLC HRE TBR WRA	7882	• CAROLYN NUMM ALT CLC ECN OLG RNG TER VIS WRA
4747	• DOROTHY NONNENKAMP ALT CLC HRB OLG REC RNG TBR WLD WRA	7704	• JANAA NUNES ALT CLC ECN OLG RNG TER VIS WRA
4119	• LUCY NONNENKAMP CLC H2O OLG EC TER WLD	1309	• MANUEL & JUDY NUNES ALT CLC ECN HRE OLG REC TER VIS WLD
9512	• NANCY J NONNENKAMP CLC FSH H2O HRB RNG TER WRA	1309	• JOSEPH E NUNES ALT CLC ECN HRE OLG REC TER VIS WLD
		6488	• MARK E NUNNELLEY CLC DRT FSH H2O TBR

672	- ROBERT NUNNINK ECN TBR WRA	2654	- JANE E OLDDEN, M D ALT OLG RECTBR WLD
7920	- JOHNNURNAU CLCECN	5532	- LYNN OLDHAM ALT CLC TER WRA
1778	- MARTIN N NVE. TER	7536	- NANCY OLDHAM ALT CLC HRE OLG REC RRG TER WLD WRA
237	- LOUIS NVENS ALT CLC	6177	- STEVE & BONNIE OLDRIDGE CLC OLG TBR WRA
5581	- QUIYSH NVUVER ALT CLC HRE OLG REC RRG TBR WLD WRA	578	- DARREL A OLDS ECN GEN OWL WRA
4000	- BECKY LEE O'CONNOR ALT CLC HRE OLG TBR WLD WRA	904	- DAVID OLEARV ECN
11178	- CARA O'NEILL CLC HRE	9757	- JOSEPH OLECHMO. ALT CLC TBR WRA
574	- OAK VALLEY HERB FARM KATHI KEVILLE CLC HRE TER	5738	- NORMANT OLESEN ALT CLC ECN H2O HRB OLG RDS REC TBR TRL WIN WLD
7418	- OAKALAD ALT CLC HRB OLG REC RRG TBR WLD WRA	5678	- MARK OLIN ALT CLC HRE OLG REC RRG TBR WLD WRA
2721	- MICHAEL OAKES ALT CLC HRE OLG TBR VIS WLD WRA	1383	- LINDA OLIVAS GEN
4043	- JOHN OBACK CLC HRB RDS REC TER WRA	1249	- ROGUE OUVAS ECN GEN TBR
2377	- JOANNE OBATA CLC HRB WRA	5087	- RANDALL J OLIVE ALT CLC ECN OLG RRG TBR VIS WRA
1856	- ROBERTS. OBERLAND ALT RDS	10396	- SUZANNE OLNE CLC HRB OLG RDS TBR
9849	- CHRISTA H OBERTH ALT CLC TBR WRA	8236	- F OLIVEIRA HRB TER
1309	- ROBERT OBOVLE ALT CLC ECN HRE OLG REC TBR VIS WLD	5374	- ALICE OLIVER ALT CLC HRB OLG REC RRG TBR WLD WRA
5419	- GERTRUDE W OBRIEN CLC	1737	- DOLLY OLIVER CLC ECN HRE TBR VIS WRA
2931	- KATHLEEN OBRIEN ALT CLC HRE OLG TER WLD WRA	11634	- DOUGLAS E OLIVER ALT CLC H2O REC TBR WLD WRA
2964	- KATHLEEN OBRIEN CLC HRB REC	841	- JEFFERV S OLIVER ECN TER
3549	- ROBERT OBRIEN ALT CLC HRB OLG TBR WLD WRA	5046	- JOSEPH OLIVER ALT CLC HRB OLG REC RRG TBR WLD WRA
4512	- ROBERT OBRIEN TBR	8318	- KEVIN J OLIVER ALT CLC HRB OLG REC RRG TBR WLD WRA
5420	- ROXANNE OBRIEN CLC	5158	- KRISTIN OLIVER ALT CLC HRB OLG REC RRG TBR WLD WRA
7386	- CORIN OCONNELL CLC OLG TER WRA	10801	- LOIS & DOUGLAS OUVER CLC H2O LND RDS REC RRG TBR WLD
7705	- RICK ODA ALT CLC ECN OLG RRG TER VIS WRA	7915	- RANDY OLIVER CLC HRE RDS RRG TBR TRL
1647	- TOM ODANIEL CLC RDS WSR	4667	- RHONDA OLIVER ALT CLC TER WRA
10530	- JEREMY ODDA CLC GEN HRE TBR	1181	- RUTH OLIVER CLC HRB TBR
10798	- CATHERINE ODDON. CLC OLG TBR WRA	4656	- SALLY OLIVER ALT CLC ECN TER WRA
849	- VICKI ODELL ECN	7696	- KARLA OLIVERIA ALT CLC TBR WRA
4190	- ARLENE ODEN ALT CLC HRE TER	5255	- BILL OLLER ALT CLC HRE OLG REC RRG TER WLD WRA
5705	- ARLENE ODEN. ALT CLC	7273	- JEANNIE MARIE OLMO ALT CLC TER WRA
5881	- ARLENE ODEN ALT CLC HRE OLG REC RRG TBR WLD WRA	342	- FRANK OLRICH, M A TBR WSR
11288	- JAMES ODEN VIS	1714	- FRANK OLRICH, M A CLC ECN HRE TER VIS WRA
1067	- JAMES R ODEN CLC ECN HRB RDS TBR	12070	- FRANK OLRICH, M A CLC ECN HRB TER
3500	- DOUGLAS L ODEUS CLC TER	844	- HARVN OLSAN ALT CLC TBR
6422	- CRAIG OEHME ALT CLC HRB OLG REC RRG TBR WLD WRA	3304	- BETTY OLSEN. CLC
11653	- THOMAS W. OESTERLE. CLC OLG TER	1526	- BRUCE M OLSEN ECN GEN TBR
9070	- CHRISTIN OFARRELL ALT CLC TBR WRA	3406	- ERICA OLSEN CLC ECN FAC HRB MIN PLN RRG TBR VIS
5565	- KIM OFARRELL. ALT CLC HRE OLG REC RRG TBR WLD WRA	7139	- GLEN OLSEN ALT CLC HRE OLG REC RRG TBR WLD WRA
9071	- MARK OFARRELL ALT CLC TBR WRA	9423	- HARRY OLSEN ALT CLC ECN OLG RRG TBR VIS WRA
2672	- WILL OGREN CLC ECN TBR	6907	- KAREN OLSEN ALT CLC TER WRA
6581	- ROEERTP OHAGAN CLC	3812	- LORI OLSEN ALT CLC HRB OLG TBR WLD WRA
7666	- COLIN OHARA ALT CLC TBR WRA	9422	- RHODA OLSEN ALT CLC ECN OLG RRG TBR VIS WRA
8889	- DOUG & GLORIA OHARA CLC	1347	- BRAD OLSON CLC FLE GEN HRE
3795	- LORRAINE OHARA ALT CLC HRE OLG TBR WLD WRA	10387	- BRUCE OLSON GEN REC TER TRL WRA
6711	- VAPERIE OHARA ALT CLC ECN HRE OLG REC RRG TBR WLD WRA	11066	- BRUCE OLSON ECN OLG OWL TBR WLD
5748	- SHANNA OHARE REC WRA		
6928	- BARBARA J OHLENDARF ALT CLC TBR WRA		
10161	- KATHLENE OJATA CLC TER		
2512	- WILLIAM OKELLN ALT HRB TBR WRA		
685	- HOWARD & PAULA OKIE CLC		
11870	- VIRGINIA & OTIS OKRANTZ CLC OLG TBR		
3650	- JON C OLANDER ALT CLC HRE OLG RDS REC RRG TBR WLD WRA		

2378	- EMILY JEAN OLSON. CLC ECN OLG	3500	- BILL & MARIAN OROURKE CLC TBR
4724	- ERICA OLSON. CLC	8731	- KAREN OROURKE' CLC
2068	- EUNICE OLSON CLC HRB TBR WRA	11312	- OROVILLE CHAMBER OF COMMERCE KEN BETH REC TBR
4824	- HAROLD OLSON ALT CLC ECN OLG RNG TBR VIS WRA	11313	- OROVILLE CITY COUNCIL JANA WILSON ECN GEN TBR
9890	- JAMES M. OLSON TBR	5665	- EM. ORR ALT CLC ECN OLG RNG TBR VIS WRA
6830	- M OLSON CLC HRB OLG REC WRA	338	- KIM RENE ORR CLC HRB OLG RDS RNG WRA WSR
51	- MRS ANGEL4 L OLSON CLC HRB TBR	52	- EDWARD F ORRIS. JR ALT CLC TBR
6888	- PAT OLSON CLCTBRWRA	3500	- CELIA ORTEAGA CLC TBR
5058	- JOHN OLSSON ALT CLC ECN OLG RNG TBR VIS WRA	6785	- DALE ORTH ALT CLC HRB OLG REC RNG TBR WLD WRA
138	- MARY OLSWANG CLC GEN HRB OLG RNG WLD WRA	11333	- FEATHER ORTIZ ALT
8582	- JOANNA OLTMAN CLC GEN OLG TBR WRA	9217	- RAYMOND G ORTIZ CLC TBR
5904	- MARYLOLVERA' ALT CLC ECN GEN OLG RNG TBR VIS WRA	6555	- RUTH ORTIZ ALT CLC HRB OLG TBR WLD WRA
5509	- PATRICK O'MALLEY ALT CLC TBR WRA	11638	- RUTH ORTIZ' CLC HRB TBR
7205	- NELLIE O'MELL ALT CLC ECN OLG RNG TBR VIS WRA	8219	- WONNE E ORTIZ CLC HRB OLG RDS TBR
5786	- ONE HOUR PHOTO ALT CLC HRB OLG REC RNG TBR WLD WRA	10966	- LINDA MORRISON ORY ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
3500	- ALICE ONEAL CLC TBR	5056	- ALISON OSBORN ALT CLC HRB OLG REC RNG TBR WLD WRA
8047	- DANIEL L ONEAL' ALT CLC ECN OLG REC RNG TBR VIS WRA	8705	- LORRAINE B OSBORN. HRB REC TBR
8048	- SANDRA ONEAL' ALT CLC ECN OLG RNG TBR VIS WRA	1340	- TERRY C. OSBORN ECN REC WLD
7367	- WILLIAM ONEAL CLC OLG TBR WRA	3342	- MIMI OSBORNE CLC TBR
1785	- BNONE ILCLC	3871	- NANCY A OSBORNE WRA
4574	- CURTIS ONEIL REC	6325	- RICHARD E OSBROM ALT CLC HRB OLO REC TBR WLD WRA
8275	- MAGGIE ONEIL ALT CLC HRB OLG REC RNG TBR WLD WRA	11965	- WILLIAM C OSBROOK TBR
5203	- CASSANDRA ONEILL CLC	1017	- JOHN S OSPKAL REC TBR
3863	- HELEN ONEILL CLC	3404	- EILEEN OSTERHOLT CLC ECN HRB TBR VIS WRA
10725	- R. ONELA CLC OLG TBR WRA	3356	- KATHRYN OSTERHOLT CLC ECN HRB TBR VIS WRA
1713	- MICHAEL ONEWING CLC ECN HRB TBR VIS WRA	4796	- KIRSTEN OSTERHOLT ALT CLC HRB OLG TBR WLD WRA
5411	- MARY ANN ONSTORT ALT CLC HRB TBR	45	- GEORGE & RHONDA OSTERTAG H2O REC RNG TBR WLD
1309	- JESSE L OPEIR ALT CLC ECN HRB OLG REC TBR VIS WLD	7443	- JOYCE OSTERUDE ALT CLC HRB OLG REC RNG TBR WLD WRA
5668	- LARRY OPPENHEIMER ALT CLC HRB OLG REC RNG TBR WLD WRA	11196	- KATHERINE OSTERYOUNG. CLC
1111	- SHARON ORANGE ECN REC TBR	699	- MARGARET OSYPOWSKI. CLC HRB OLG TRL VIS WLD WRA
10051	- D. JEAN ORBON. ALT CLC ECN OLG RNG TBR VIS WRA	178	- TOM OSYPOWSKI CLC ECN H2O HRB RDS TBR WLD
4608	- PETE ORCHARD ALT CLC TBR WRA	309	- TOM OSYPOWSKI' CLC ECN HRB OLG TBR WRA
12188	- PETE ORCHARD ALT CLC TRL	10115	- TOM OSYPOWSKI ALT CLC ECN OLG RNG TBR VIS WRA
10079	- ANDREA ORDWAY. ALT CLC ECN OLG RNG TBR VIS WRA	4576	- ANGELA OTT' CLC
7718	- RON ORDWAY ALT CLC ECN OLG RNG TBR VIS WRA	3872	- GOLDIE OTTERS CLC HRB OLG TBR WRA
8228	- JEANNE ORENKO. CLC DRT ECN H2O HRB REC	9319	- ERIC OTTO; ALT CLC GEN TBR WLD
8381	- DAVE ORIDICE ALT CLC HRB OLG TBR WLD WRA	6026	- J OTTO ALT CLC ECN OLG RNG TBR VIS WRA
10658	- JACK ORISCOLL' ALT CLC ECN OLG RNG TBR VIS WRA	8244	- MARVENE OTTO ALT CLC ECN OLG RNG TBR VIS WRA
8372	- O. ORTICH ALT CLC HRB OLG REC RNG TBR WLD WRA	9069	- ERIN OUBELMAN ALT CLC TBR WRA
6638	- DINO ORLANDI' CLC	6501	- SHARON OURPHREN. ALT CLC HRB OLG REC RNG TBR WLD WRA
3500	- PAUL4 ORLOFF. CLC TBR	9115	- KATHIE OVERBY ALT CLC ECN OLG RNG TBR VIS WRA
2967	- PAULA & JEROME ORLOFF' ALT HRB VIS WLD	2683	- R GAIL OVERGARD. ECN TBR
20012	- BENJAMIN ORLOVE CLC TBR WRA	7978	- ROY L OVERSTREET. ALT CLC ECN OLG RNG TBR VIS WRA
9327	- FRANK ORNIATER ALT CLC GEN HRB OLG TBR WLD WRA	9226	- CATHY & STEVE OVIATT CLC ECN HRB TBR WRA
20500	- DAVID OROASDEILE TRL		
7543	- ORODDY ALT CLC HRB OLG REC TBR VIS WLD WRA		

7151	- ENOCK OWEL, ALT CLC TBR WRA	267	- GREGORY PAIS CLC ECN H2O HRB OLG
5526	- CATHERINE OWEN ALT CLC TBR WRA		RNG TBR WRA
6442	- CHRIS OWEN ALT CLC ECN OLG RNG	3463	- GREGORY PAIS CLC ECN LND OLG RDS
	TBR VIS WRA		REC RNG TBR TRL WIN WLD WRA
5843	- JANICE OWEN ALT CLC HRB OLG REC	361	- MEG K PALLEY CLC
	RNG TBR WLD WRA	1745	- MEG K PALLEY CLC ECN HRB TBR VIS
4328	- DAVE OWENS CLC		WRA
731	- DAVID L OWENS TBR	10296	- MICHAEL PALMER ALT CLC TBR WRA
3112	- W N N A OWENS ALT CLC ECN GEN	8660	- NAOMI ELLIOTT PALMER CLC HRB TBR
4325	- MARTA OWENS. CLC	20014	- RMFORD PALMER ALT ECN GEN RDS
6855	- DAVID OWENS ALT CLC H2O REC TBR		REC RNA RNG SNP URB WIN WLD
	WLD	1626	- ROBERT J PALMER TBR
6855	- ROBERT H OWENS ALT CLC H2O REC	12142	- ROBERT J PALMER ECN TBR
	TBR WLD	5859	- TIM PALMER. ALT CLC HRB OLG REC RNG
8561	- VERONICA OWENS CLC GEN OLG TBR		TBR WLD WRA
	WRA	11509	- TIM PALMER CLC DRT HRB
8884	- WILLIAM A OWENS, JR. ALT CLC HRB	304	- FRANCISH, PALMER, JR * CLC HRB TBR
	OLG TBR WLD WRA		WRA
4217	- NADJA OXFORD ALT CLC HRB OLG REC	9267	- CHRISTINE PALOMO CLC
	RNG TBR WLD WRA	10926	- CHARLENE PALRUTOG ALT CLC TBR WRA
3500	- STEVEN W OXWOOD CLC TBR	4213	- JAMES PALUMBO CLC HRB OLG REC TBR
2224	- BARBARA OZZELLO-REED; CLC ECN GEN		WLD WRA
	OLG TBR TRL	9377	- JOE PALYS. CLC REC
8155	- BOB BREWER OZZY ALT CLC HRB OLG	8696	- MARIA L PAMAN ALT CLC ECN OLG RNG
	REC RNG TBR WLD WRA		TBR VIS WRA
1372	- PACIFIC HOE SAW & KNIFE CO WILLIAM R	346	- EDWARD PANACEK TBR
	MCKILLIP. ECN TBR	4678	- JOHN PANAGIOSIDIS ALT CLC TBR WRA
2545	- PACIFIC LUMBER & SHIPPING MARLA	2623	- JOHN PANCE ECN TBR
	MARVIN GEN REC TBR	5258	- KIRK PANECCI. ALT CLC HRB OLG REC
2080	- PACIFIC SW FOREST PRODUCTS DONALD		RNG TBR WLD WRA
	CRANE. GEN TBR	1253	- KIRK PANELLI CLC HRB
2366	- PACIFIC FOREST PRODUCTS A T MATH-	10290	- EMILY PAPA ALT CLC TBR WRA
	EWES, JR . ECN TBR	1678	- H DEAN PAPE. ECN
2378	- PACIFIC LUMBER SHIPPING MARLA MARV-	1794	- RANDALL C PAPE ECN GEN
	IN GEN REC TBR WRA	9843	- DAVID PAPNA ALT CLC TBR WRA
7694	- STEVEN PACKARD CLC ECN HRB TBR VIS	11392	- RAY PAQUETTE CLC TBR
	WRA	8314	- MIKE PAR ALT CLC HRB OLG REC RNG
548	- PACKER LAKE LODGE WILLIAM D MAC-		TBR WLD WRA
	QUATTI, JR LND TBR TRL	7274	- AMY PARAT ALT CLC TBR WRA
4212	- ANNE PADGET CLC OLG TBR WLD WRA	4598	- CAROLINE PARDILLA CLC
3964	- (FAMILY) PADILLA; CLC GEN HRB TBR	8935	- LINDA M PARDITT ALT CLC HRB OLG
5307	- NAVA PADILLA. ALT CLC HRB OLG REC		REC RNG TBR WLD WRA
	RNG TBR WLD WRA	120	- CHARLES D PARENT CLC OLG RNG TBR
3292	- ZACHARY & GARRIEL PADILLA CLC TBR		WRA
887	- ARIEL PAFF CLC DRT ECN OLG TBR WLD	6261	- LINDA PARFITT ALT CLC LND TBR WRA
4008	- ARIEL PAFF. ALT CLC HRB OLG REC RNG	10272	- DAN PARFRITT ALT CLC TBR WRA
	TBR WLD WRA	7275	- NEAL PARGNUM. ALT CLC TBR WRA
4703	- JUSTIN PAGAN CLC TBR	7415	- DOUG PARIS ALT CLC HRB OLG REC RNG
3150	- PETE PAGAN CLC HRB		TBR WLD WRA
6693	- B.M PAGE ALT CLC ECN OLG RNG TBR	5155	- LAKSHMI PARKA ALT CLC ECN OLG RNG
	VIS WRA		TBR VIS WRA
9337	- MAJOR & MRS. DOUG PAGE CLC H2O	5525	- CINDY PARKER ALT CLC TBR WRA
	HRB REC TBR VIS	2102	- DAVID M PARKER TBR
5202	- TOM PAGE ALT CLC HRB OLG REC RNG	6728	- JAYNE & FRANK PARKER CLC
	TBR WLD WRA	11429	- JAYNE & FRANK PARKER. CLC ECN TBR
1511	- WILLIE F. PAGE ECN TBR	10856	- JOAN PARKER CLC TBR
5159	- CHUCK M PAGETT ALT CLC ECN OLG	8552	- JOHN PARKER CLC HRB OLG TBR WRA
	RNG TBR VIS WRA	7962	- TERRY PARKER ALT CLC TBR WRA
5666	- JANIS PAGLILLA ALT CLO HRB OLG REC	9408	- WONNE PARKER ALT CLC ECN OLG RNG
	RNG TBR WLD WRA		TBR VIS WRA
5683	- CHRIS PAINE ALT CLC HRB OLG REC	7930	- CHRISTINA M PARKS ALT CLC ECN GEN
	RNG TBR WLD WRA		OLG RNG TBR VIS WRA
560	- F WARD PAINE REC	10935	- CLARAPARKS CLC
6357	- RUTH PAINE ALT CLC HRB OLG REC RNG	8027	- GREGORY L PARKS ALT CLC ECN OLG
	TBR WLD WRA		REC RNG TBR VIS WRA
3583	- DENISE PAINTER. CLC HRB TBR	3183	- MIDRID PARKS GEN TBR
11438	- DENISE PAINTER CLC HRB TBR	6192	- WILLIAM PARKS ALT CLC ECN OLG RNG
6003	- JOHN PAINTER ALT CLC ECN OLG RNG		TBR VIS WRA
	TBR VIS WRA		

4847	BARBARA PARMAN ALT CLC HRB OLG REC RNG TBR WLD WRA	225	- STEVE PATWELL. ECN HRB TBR WRA
4846	YVETTE PARMAN ALT CLC HRB OLG REC RNG TBR WLD WRA	484	- STEVEN W PATWELL, M,C CLC FSH TRL
4252	CHARLENE PARMANTER GEN	10454	- JANJAY PATY ALT CLC TBR WRA
956	HELEN J PARNELL. CLC GEN REC TBR	98	- BETH K PAUL CLC HRB RNG WRA
10325	GARY W PARRIS ALT CLC ECN OLG RNG TBR VIS WRA	5001	- BLAKEPAUL CLC
3954	JOY PARRISH CLC ECN HRB LND OLG RDS TBR	917	- DAVE PAUL FSH GEN TRL WLD
7314	PHILLIP S PARSJINAY ALT CLC GEN HRB OLG REC RNG TBR WLD WRA	6658	- MARGARET PAUL ALT CLC ECN OLG RNG TBR VIS WRA
5067	BILL PARSON ALT CLC HRB OLG REC RNG TBR WLD WRA	11167	- PATRICK J PAUL CLC TBR WRA
7131	STEPHAN PARSON. ALT CLC HRB OLG REC RNG TBR WLD WRA	1734	- RONNIE PAUL CLC ECN HRB REC TBR VIS WRA
7550	- EARLENE PARSONS ALT CLC ECN OLG RNG TBR VIS WRA	6998	- RONNIE PAUL ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
993	- JOHN BOYD PARSONS ALT CLC RDS TBR WLD	5787	- PAULINES LADIES WEAR ALT CLC HRB OLG REC RNG TBR WLD WRA
7195	- DAN PAFITAIN ALT CLC TBR WRA	8193	- VANCE PAULSEN ALT CLC HRB OLG REC RNG TBR WLD WRA
2027	- DON PARTEANS. ALT ECN GEN	4313	- JACK PAULSON CLC
4060	- DONNA PARTEN CLC TBR	4838	- JUDE PAULSON ALT CLC HRB OLG REC RNG TBR WLD WRA
10041	- LORNA PARTON CLC GEN HRB TBR	3789	- PATRICK PAULSON ALT CLC HRB OLG REC RNG TBR WLD WRA
10012	- MARY PARTON, CLC GEN HRB TBR	3448	- THERESE PAULSON CLC ECN HRB TBR VIS WRA
1189	- KATE PARTRIDGE ALT CLC GEN HRB TBR	5716	- THERESE PAULSON ALT CLC HRB OLG TBR WLD WRA
10834	- DON & BETH PARVIN. CLC TBR	8454	- THERESE PAULSON ALT CLC HRB OLG REC RNG TBR WLD WRA
5182	- KIOUMARS PARYANI' ALT CLC HRB OLG REC RNG TBR WLD WRA	8654	- LAUREL PAULSON-PIERCE AIR ALT CLC ECN GEN H2O HRB LND OLG RDS REC TBR TRL VIS WRA WSR
8347	- ROBIN DEHA PAS ALT CLC HRB OLG TBR WLD WRA	7756	- MARTIN PAULTER ALT CLC ECN OLG RNG TBR VIS WRA
3378	- S PASAHEN' ALT ECN GEN	10677	- FRED & C PAUSER. ALT CLC ECN OLG RNG TBR VIS WRA
3537	- ROBERT PASAL' ALT ECN GEN	193	- BRUCE M PAVLIK. CLC OLG TBR WRA
4340	- CAROLYN & PHILIP PASKAL' ALT CLC HRB OLG REC RNG TBR WLD WRA	9666	- BUCK PAVON ALT CLC TBR WRA
5717	- DIANA PASQUINI' ALT CLC ECN H2O HRB PLN REC VIS	6674	- DORY PAWLAKOS ALT CLC HRB OLG REC RNG TBR WLD WRA
4180	- VINCE PASTORE' CLC HRB TBR	7783	- DR LOUIS PAYEN ALT GEN TBR VIS
477	- PAT BROWNING LOGGING MELVIN & NITA BROWNING REC TBR WRA	7231	- WILLIAM WADE PAYNE ALT CLC HRB REC VIS
5197	- JACOB PATE ALT CLC HRB OLG REC RNG TBR WLD WRA	5572	- R J PAWNE ALT CLC HRB OLG REC RNG TBR WLD WRA
8483	- SUE P. PATHEN. ALT CLC HRB OLG REC RNG TBR WLD WRA	11509	- KAY PEACE. CLC DRT HRB
5935	- STEWART PATRIGNANI' ALT CLC ECN OLG RNG TBR VIS WRA	9500	- PEACEFUL VALLEY FARM SUPPLY JAN TODD. AIR CLC ECN H2O HRB OLG REC RNG TBR VIS WLD WRA
11509	- KENNY PATROCK CLC DRT HRB	598	- PEACEFUL VALLEY FARM SCHWARZKOPF, ART (ECN GEN REC TBR
6705	- M PATTERN CLC	1796	- PEAC FL VALLEY ARM JEAN SCHW R CLC ECN
4569	- CYNTHIA PATTERSON' CLC	3869	- PEACEFUL VALLEY FARM BOB CANTISANO AIR ALT CLC DRT ECN H2O HRB OLG REC TBR WRA
8023	- DIANE E PATTERSON ALT CLC ECN OLG RNG TBR VIS WRA	11258	- ERIC PEACH CLC WLD WSR
4936	- MARJORIE PATTERSON. ALT CLC ECN OLG RNG TBR VIS WRA	10351	- ERIC & FAMILY PEACH. CLC HRB RDS TBR WRA
4937	- RUTH A. PATTERSON ALT CLC ECN OLG RNG TBR VIS WRA	3367	- PAULPEACOCK REC
20013	- SHERYL PATTERSON CLC GEN HRB LND RDS RNG TBR TRL	10971	- CAROL ALICE PEAKE ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
6682	- SUSAN PATTERSON ALT CLC ECN OLG RNG TBR VIS WRA	8226	- LENA S PEARCE ALT CLC
476	- WILLIAM D PATTERSON CLC ECN GEN H2O RNG WLD WRA	2778	- DR JAMES M PEARCE. JR ALT CLC HRB OLG TBR WLD WRA
1909	- R A PATTILLOS ECN TBR	6222	- GARY PEARCY ALT CLC ECN OLG RNG TBR VIS WRA
2880	- BARBARA J PATTON' ALT CLC REC WLD		
9350	- JUDY PATTON ALT CLC HRB OLG REC RNG TBR WLD WRA		
10192	- BOBBY PATTS TBR		
4896	- PAT PATUREI ALT CLC HRB OLG REC RNG TBR WLD WRA		

727	- BURNELL D PEARD GEN OWLTBR	11285	- LEWIS PELL CLC GEN TBR
5974	- ROXANN PEARD ALT CLC HRB OLG REC RNG TBR WLD WRA	3314	- LEWIS M PELL CLC ECN HRB OLG REC RNG TBR VIS WSR
5082	- JEFF PEARL ALT CLC ECN OLG RNG TBR VIS WRA	5730	- SALIM PELL TBR
9054	- GARY PEARSON ALTCLCHRBOLGREC RNG TBR WLD WRA	7870	- CHRISTANEE PELL R N ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
10137	- JEAN PEARSON ALT CLC ECN OLG RNG TBR VIS WRA	9095	- PIERRE PELLISSIER ALT CLC TBR WRA
4855	- JEANETTE PEARSON AIR ALT CLC HRB OLG TBR WLD WRA	784	- ROB PELLO ECNTBR
5216	- JEANETTE PEARSON ALT CLC HRB OLG REC RNG TBR WLD WRA	5244	- DAMIAN PELSTER ALT CLC HRB OLG REC RNG TBR WLD WRA
5444	- RON & SHARON PEAT CLC H2O HRB REC TBR VIS	4378	- RICHARD PELTIER CLC GEN HRB RNG TBR VIS WRA
2747	- DONALD E PECK ALT CLC HRB OLG TBR WLD WRA	7141	- RICHARD PELTIER ALT CLC ECN OLG RNG TBR VIS WRA
139	- HENRY PECK ALT CLC HRB RDS	11210	- RICHARD H PELTIER ALT CLC TBR
3281	- JIM & ANN PECK REC WIN	5115	- DEE ANN PEMBERTON ALT CLC HRB OLG REC RNG TBR WLD WRA
6378	- MICHELLE PEOEN ALT CLC HRB OLG REC RNG TBR WLD WRA	4528	- MARJORIE PEMBERTON CLC
2019	- WES PEDEN ALT ECN GEN	580	- MOLLY A PENBERTH H2O HRB LND RDS RNG TBR WLD
5849	- BRIAN PEDERSEN & SUSAN ASAM ALT CLC HRB OLG REC RNG TBR WLD WRA	10128	- DOROTHY I PENCIK ALT CLC ECN OLG RNG TBR VIS WRA
11716	- ANDREW & DNANY PEDERSON GEN	10127	- FRANK PENCIK ALT CLC ECN OLG RNG TBR VIS WRA
527	- LARRY L PEDIGO CLC HRB RNG TBR	9020	- SANARA PENCIK ALT CLC HRB OLG REC RNG TBR WLD WRA
9581	- MOLLY DEVINE PEDIGO CLC HRB REC RNG TBR	2072	- PENDLETON MILLING CO WILLIAM G PENDLETON TBR
7720	- LYNN PEDISEN ALT CLC ECN OLG RNG TBR VIS WRA	11151	- DE PENDOLA CLC HRB
10935	- ARMOND PEDRETTI CLC	3250	- E T PENGELLEY CLC TBR
10935	- MILDRED PEDRETTI CLC	6248	- JOHN PENNINGTON ALT CLC HRB OLG REC RNG TBR WLD WRA
5538	- KATHERINE PEDRONI ALT CLC TBR WRA	5614	- ELTON PENLAND ALT CLC HRB OLG REC RNG TBR WLD WRA
5359	- ELDA B PEDROZA ALT CLC ECN OLG RNG TBR VIS WRA	5583	- RYLAN PENLAND ALT CLC HRB OLG REC RNG TBR WLD WRA
5358	- KATHY PEDROZA ALT CLC ECN OLG RNG TBR VIS WRA	3500	- CHARLES W PENN CLC TBR
5352	- ROXANE PEDROZA ALT CLC ECN OLG RNG TBR VIS WRA	6855	- FAUSTINE GRACE PENNEY ALT CLC H2O REC TBR WLD
5399	- HOLLY PEDUSA ALT CLC HRB OLG REC RNG TBR WLD WRA	871	- DON PENNINGTON ECN TBR
9416	- C PEEBLES ALT CLC ECN OLG RNG TBR VIS WRA	5224	- JOSEPH PENNROSE ALT CLC HRB OLG REC RNG TBR WLD WRA
1398	- DAVID C PEEL TBR	74w	- NORMA R PENNY ALT CLC ECN OLG RNG TBR VIS WRA
1389	- LAURIE PEEL ECN WLD	7986	- WILLIAM PENNY ALT CLC HRB OLG REC RNG TBR WLD WRA
1623	- ROBERT H PEELER ECN TBR	4339	- WALTER PENROD CLC
6474	- ANNA PEERBOLT ALT CLC HRB OLG TBR WLD WRA	4996	- BRADLEY PENROSE ALT CLC ECN OLG RNG TBR VIS WRA
7789	- CANDACE PEERY CLCECNHRBTBR	4997	- JW PENROSE ALT CLC ECN OLG RNG TBR VIS WRA
6518	- DOROTHY A PEGEON ALT CLC HRB OLG REC RNG TBR WLD WRA	4995	- MERLEN PENROSE ALT CLC ECN OLG RNG TBR VIS WRA
9895	- PETER B PEISER II CLC ECN HRB OLG	4994	- WESLEY PENROSE ALT CLC ECN OLG RNG TBR VIS WRA
7120	- JEFF PEKAREK ALT CLC ECN OLG RNG TBR VIS WRA	6853	- PAT PENSE CLC TBR
4058	- CHERYL PEKTER CLC HRB RDS REC TBR VIS	7389	- KIM PENSKY CLC OLG TBR WRA
5781	- CAROL PELAYO ALT CLC HRB OLG REC RNG TBR WLD WRA	333	- SCOTT PEOPLES CLC
7850	- PIERRE PELLISSIER ALT CLC TBR WRA	9598	- (FAMILY) PEPPER ALT CLC ECN FLE GEN HRB OLG TBR
170	- CHRIS PELL ALT GEN TER WRA	9291	- ALAN E PEPPER CLC ECN HRB REC TBR VIS WRA
1746	- CHRIS PELL CLC ECN HRB OLG TBR VIS WLD WRA	7643	- POLLY PEPPER ALT CLC TBR WRA
5434	- L PELL CLC ECN FLE HRB TBR	6853	- SANDE PEPPER CLC TBR
1701	- LEWIS PELL CLC ECN HRB TBR VIS WRA	2260	- MICHELE PEQUET CLC HRB TBR
7898	- LEWIS PELL ALT CLC HRB OLG REC RNG TBR WLD WRA	10285	- CLIFF PEQUET & JANE GRABER ALT CLC TBR WRA

642	• PAUL R PERCHONOCK, MD : REC WIN	1915	• NEAL PETERSON ALT ECN GEN
8567	- KARA PERCUSKY CLC GEN OLG TBR WRA	3500	• ROBERTA PETERSON CLC TBR
10556	• PAUL PERCY CLC GEN HRB TBR	224	- WILLIAM V PETERSON REC
10555	- TIFFANY PERCY CLC GEN HRB TBR	10570	- DALE PETERSON, JR · CLC GEN HRB TBR
7711	- SHARAN PERDUE ALT CLC ECN OLG RNG TBR VIS WRA	9323	- SONJA E PETERSON, RM CLC H2O HRB RECTBR VIS
6587	- VERONICA D PEREZ CLC ECN FAC HRB MIN PLN RNG TBR VIS	5063	- DANILAT PETLTA ALT CLC ECN OLG RNG TBR VIS WRA
10211	- K. PERICAO. ALT CLC TBR WRA	2172	- TERESA PETRETTI CLC HRB WIN
8406	- GEORGIA PERKINS. CLC H2O REC TBR VIS	3150	• DAVID PETRI CLCHRB
2668	• RON PERKINS CLC GEN H2O TBR WLD	5965	• LEHAMAI PETRICH ALT CLC HRB OLG REC RNG TBR WLD WRA
3138	• CHARLENE PERMANTER' CLC	11593	• BASYA PETRUCK CLC OLG
1934	- MICHAEL PERO ALT ECN GEN	20504	• LOU PEYTON TBR
9391	• CAROLYN E PERRAULF ALT CLC TBR WRA	2417	• ELEANOR G PFALMER ALT CLC HRB OLG TBR WLD WRA
8774	- DAVID PERRONE ALT CLC ECN OLG RNG TBR VIS WRA	7960	• CHRISTINE PFAN ALT CLC TBR WRA
1184	• DANAPERRY CLCOLG	9230	• JOHN C PFEIFFER CLC RDS TBR TRL WRA
2425	- DONALD PERRY CLC ECN HRB TBR WLD	4176	• ROBERT PFISTER ALT CLC TBR
6871	• EARL & CLAUDIA PERRY WRA	1882	- PG&E BRUCE BENZLER GEN H2O LND RDS TRL VIS
20500	• ISOLDE M PERRY TRL	8417	• PG&E P B BENZLER, PLANNING DIRECTOR CLC FSH H2O LND RDS REC SNP TRL VIS
1309	• K. PERRY ALT CLC ECN HRB OLG REC TBR VIS WLD	10155	• LANN PHAN. CLC HRB
4233	• PAUL PERRY ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	9745	- MRS H M PHARIS ALT CLC ECN OLG RNG TBR VIS WRA
7373	- SAM PERRY CLC ECN OLG TBR WRA	5834	- SHIRLEY PHELPS ALT CLC HRB OLG REC RNG TBR WLD WRA
11719	• HILDA PERRYMAN. CLC HRB REC TBR	10036	- TAMARA PHELPS CLC GEN HRB TBR
2986	- MRS C R PERRYMAN CLC ECN HRB REC TSR	10571	• DAVID E PHETAS CLC GEN HRB TBR
2717	• RAY PERRYMAN. CLC REC VIS	8534	- DAN PHILIP ALT CLC HRB OLG REC RNG TBR WLD WRA
11241	- JOHN PERSONENI. ALT CLC HRB TBR WLD WRA	4772	• ANN PHILLIPS CLC GEN OLG TBR WRA
1030	• JOHN L PERSONENI. CLC GEN TBR	7016	• BETH PHILLIPS ALT CLC TBR WRA
4390	- PHIL PERSONENI. CLC GEN RNG	4533	• DAVID PHILLIPS ALT CLC HRB OLG REC RNG TBR WLD WRA
11240	• PHIL PERSONENI. RDS REC TBR TRL	10473	• GLENN PHILLIPS ALT CLC TBR WRA
3620	• DIANA PEETS CLC FSH HRB TBR	3312	• HARTLEY PHILLIPS. ECN TBR
10712	- BRIAN PETERS ALT CLC TBR WRA	3963	• HARTLEY PHILLIPS TBR
676	• JOHN M PETERS. ALT CLC TBR	5024	- HARTLEY PHILLIPS ECN
5196	- JUDY PETERS ALT CLC HRB OLG REC RNG TBR WLD WRA	3435	• JACQUELINE PHILLIPS CLC FSH HRB TSR
7379	- KATIE PETERS CLC OLG TBR WRA	10064	- JOHN PHILLIPS ALT CLC HRB OLG REC RNG TBR WLD WRA
4261	• SUSAN PETERS ALT CLC HRB OLG TBR WRA	8260	• JOYCE PHILLIPS ALT CLC HRB OLG REC RNG TBR WLD WRA
8993	• ERA PETERSEN CLC FLE FSH GEN H2O HRB OLG RNG TBR TRL WLD	10326	- JUDITH PHILLIPS. ALT CLC ECN OLG RNG TBR VIS WRA
9722	- CHESTER PETERSON ALT CLC ECN OLG RNG TBR VIS WRA	5215	• LAURENCE I ALT CLC HRB OLG REC RNG TBR WLD WRA
4638	- CURT PETERSON' ALT CLC HRB OLG TBR WLD WRA	2154	• LORI PHILLIPS ECN GEN TBR
9934	• CYNTHIA PETERSON CLC GEN HRB TBR	2863	- MERLIN PHILLIPS ECN TBR
1309	• DEBBIE PETERSON ALT CLC ECN HRB OLG REC TBR VIS WLD	3442	• MR & MRS PHILLIPS CLC
7873	- DENISE PETERSON ALT CLC HRB OLG REC RNG TBR WLD WRA	1750	- MUSUKI PHILLIPS. CLC ECN HRB TBR VIS WRA
1049	• DOUGLAS E. PETERSON CLC TBR	614	• PATRICIA PHILLIPS CLC OLG TBR
7981	• HOLLY PETERSON ALT CLC HRB OLG REC RNG TBR WLD WRA	4514	• R W PHILLIPS TBR
4859	- JAN PETERSON ALT CLC HRB OLG REC RNG TBR WLD WRA	10347	• SUSAN PHILPOTT CLC TBR
3816	• JANET PETERSON ALT CLC HRB OLG TBR WLD WRA	8829	- SEAN T PHINNEY, REC TBR
3072	- JODY R PETERSON CLC ECN TBR	11161	- JOE PICARD CLC ECN
145	• MARY PETERSON ALT CLC H2O RDS TBR	11866	- JOE PICARD CLC TRL
6433	MR PETERSON ALT CLC ECN OLG RNG TBR VIS WRA	10048	• JENIFER PICCARELLI CLC GEN HRB TBR
		3343	• S PICHAI CLC
		5780	• PATRICIA PICKERING ALT CLC HRB OLG REC RNG TBR WLD WRA
		3720	• GEORGE PICKET CLC TBR
		5903	• KENNETH L PICKET ALT CLC ECN OLG RNG TBR VIS WRA

1152	• PATRICIA PICKET. GEN HRB LND OLG RDSTBR WIN WRA	11128	• PLACER CO BOARD SUPERVISORS TERR COOK ALT CLC DRT ECN GEN RDS REC TIM
7518	• PAUL PICKETT ALT CLC FSH HRB OLG REC RNG TBR WLD WRA	11722	- PLACER CO BOARD SUPERVISORS ERIK HENRICKSON ALT CLC ECN OLG R
7207	- JIM PICKLER ALT CLG ECN OLG RNG TBR VIS WRA	4621	- PLACER CO BOARD SUPERVISORS ERIK HENRICKSON ALT CLC ECN OLG TBR
9648	- WILLIAM C PIEPER ALT CLC TBR WRA	8814	- PLACER CO CONSERVATION TASK FORCE MARK FOWLER CLC ECN H2O HRB REC VIS WRA WSR
10802	- WILLIAM C PIEPER CLC H2O REC TBR WRA	11136	- PLACER CO CONSERVATION TASK FORCE MARK FOWLER CLC H2O HRB REC VIS WSR
5675	- DAMIAN PIERCE ALT CLC HRB OLG REC RNG TBR WLD WRA	2849	- PLACER CO CONSERVATION TASK FORCE HELEN WAUTERS ALT CLC ECN
2711	• E F & GLADYS PIERCE CLC	20508	- PLACER ELECTRIC RICHARD NOGLEBERG, PRES. RDS TBR
3374	- HOWARD PIERCE ECN TBR	8649	• PLACER SPORTSMEN, INC DELLA STAATS CLC HRB RDS WLD WRA
7448	- THOMAS PIERCE ALT CLC HRB OLG REC RNG TBR WLD WRA	250	- PLANNING & CONSERVATION LEAGUE GERALD H MERAL CLC ECN FSH REC TBR
7138	• WAYNE PIERCE ALT CLC HRB OLG REC RNG TBR WLD WRA	4388	- PLANNING & CONSERVATION LEAGUE JERRY MERAL CLC FLE FSH HRB OLG TBR VIS WRA WSR
8248	• WILLIAM R PIERCE CLC	11509	- GEORGE PLATER CLC DRT HRB
6757	- J PIERINI ALT CLC HRB OLG REC RNG TBR WLD WRA	5991	- MARK PLATT ALT CLC HRB OLG REC RNG TBR WLD WRA
10509	• STEPHANIE PIERSON & JESSE BUNKER CLC HRB REC TBR WLD	2382	- SUSAN PLATT ALT CLC HRB OLG RDS TBR WRA
8055	• VICTOR PIETRYAK ALT CLC TBR WRA	4988	• JACQUELYN PLATTE ALT HRB TBR
7840	• JAY PIKE ALT CLC TBR WRA	10060	- JACQUELYN PLATTE ALT CLC ECN OLG RNG TBR VIS WRA
4955	- DOUGLAS PIKE, JR ALT CLC HRB OLG TBR WLD WRA	8841	- MARILYN PLAZA ALT CLC HRB OLG TBR WLD WRA
5535	- PAUL PLEOWSKY ALT CLC TBR WRA	622	- KENNETH PLOWMAN ECN VIS
5168	- KENI PLENTEZ ALT CLC ECN OLG RNG TBR WRA	9427	- SUZANNE PLOWMAN ALT CLC ECN OLG RNG TBR VIS WRA
1936	- JACK PINE ALT ECN GEN	11092	- PLUMAS/SIERRA CITIZENS FOR MULTIPLE-USE BROOKS MITCHELL ECN LND RNG TBR WRA
5324	- JON PINEGREE ALT CLC HRB OLG REC RNG TBR WLD WRA	11063	- PLUMAS CITIZENS FOR MULTIPLE-USE DAN SMITH ECN LND RNG TBR WRA
9921	• JON PINGREE CLC GEN HRB TBR	3150	- PATRICK PLUMLEY CLC HRB
1	• GEORGE L PINK, CLC TBR	3651	- PLYWOOD MFG OF CA ALEC E GILAD, PRES. ECN TBR
10186	• STEPHANIE PINKHAM CLC TBR	6853	- ROBEF CLC BF
839	• M L PINNEY OWL WLD	1932	- CLEO POE ECN GEN
9256	- CHRISTOPHER PINTO CLC HRB OLG TBR WRA	1928	- IRENE POE ALT ECN GEN
4489	- DEBORAH PINTO ALT CLC FLE GEN HRB OLG TBR	7981	- KRISTEN POFF ALT CLC HRB OLG REC RNG TBR WLD WRA
12073	• DAVID PIPER CLC GEN TBR	8324	- KRISTEN POFF ALT CLC HRB OLG REC RNG TBR WLD WRA
2722	• DAVID C PIPER CLC GEN	8864	- DEBRA R POE ALT CLC GEN HRB OLG TBR WRA
a5	• PAMELA D PIPER, CLC HRB REC RNG TBR VIS	10633	- JOE POLANSKY ALT CLC HRB OLG TBR WLD WRA
1270	- WILLIAM PIPER CLC HRB TBR	7735	- S POLCSEK ALT CLC ECN OLG RNG TBR VIS WRA
11149	- DANNY PIPKINS ECN TBR WRA	10475	- AMY POLHEMUS ALT CLC TBR WRA
6037	- DEN PIRO ALT CLC ECN OLG RNG TBR VIS WRA	1347	- BERLYN POLISM CLC FLE GEN HRE
9238	• MADLYN C. PISCIOTTA ALT CLC HRB OLG TBR WLD WRA	3617	- DEENA C POLLOCK ALT REC TBR
4069	• NATINA PISTONE ALT CLC ECN OLG RNG TBR VIS WRA	3495	- JOHN & GLADYS POLTEMAS CLC VIS
3691	• JAMES R PISULA TBR	8184	- MARKIE POLLY ALT CLC HRB OLG REC RNG TBR WLD WRA
1435	- ANITA PITCHER CLC OLG REC RNG TBR WLD WRA		
8695	- DON PITT ALT CLC ECN OLG RNG TBR VIS WRA		
8693	• MRS DONALD PITT ALT CLC ECN OLG RNG TBR VIS WRA		
3553	- GWLA PITTMAN CLC HRB		
4397	- MELISADE PITTMAN ALT CLC FLE H2O HRB OLG TBR WLD WRA		
10229	- KAREN PITTMAN ALT CLC TBR WRA		
1762	• LARRY PIZER GENTBR		
5508	- JEANIE PIZZRITO ALT CLC TBR WRA		
4381	• PLACER CO BOARD OF REALTORS ELLEN LASATER CLC H2O TBR WRA		

10271	- LUCAS POMEROY ALT CLC TBR WRA	696	- ALAN POWER CLC REC TBR
866	- PHIL & CARLA POMEROY. CLC WLD	5285	- HARRIET POWER ALT CLC HRB OLG REC
866	- MILDRED & GINGER POMEROY. CLC WLD		RNG TBR WLD WRA
6479	- PONDEROSAASSOC CLC	6038	- BOBBE POWERS ALT CLC ECN OLG RNG
4991	- MEL & MARCELLA PONTA ALT CLC ECN		TBR VIS WRA
	LNDTRL WRA	1343	- GAIL POWERS REC TBR
2550	- K.V POOL CLC REC TBR VIS	3671	- RICHARD POWERS ALT ECN TBR
2575	- R W POOL CLC TBR	1369	- SEAN POWERS CLC GEN
4968	- DANIEL POOLE. CLC TBR	3665	- DALE H POWERS, DC .ALT CLC HRB
571	- KENNETH L POOLE. TBR		OLG REC TBR WLD WRA
20500	- D POPOVIC TRL	366	- NANCY POXON CLC WSR
3406	- AMY POPPLETON CLC ECN FAC HRB MIN	3500	- JAMES PRAGEN CLC TBR
	PLN RNG TBR VIS	10592	- MAVIS PRAID ALT CLC HRB OLG TBR WLD
4718	- AMY POPPLETON ALT CLC		WRA
7277	- DEIRDRE POPPLEWELL ALT CLC TBR	5914	- PRAIRIE ROSE ALT CLC HRB OLG REC
	WRA		RNG TBR WLD WRA TRL WLO WRA
5511	- SUSAN POPPY. ALT CLC TBR WRA	11549	- GUNDA PRAMUK CLC OLG
6094	- ZIV PORAT ALT CLC ECN OLG RNG TBR	10183	- I I E F CLC
	VIS WRA	7441	- E T F ALT CLC HRB
4243	- STEVE PORDEN ALT CLC HRB OLG RDS		OLG REC RNG TBR WLD WRA
	TBR WRA	2394	- HOWARD PRATER ALT HRB
6191	- RANDY PORPIGLIA ALT ECN	3203	- PAULETTE PRATSCHNER CLC OLG TBR
837	- PORT OF SACRAMENTO MELVIN SHORE		WRA
	ECN TBR	4403	- BOB & ROSETTA PRATT CLC REC
6114	- PASQUA PORTELLO. ALT CLC TBR WRA	779	- TED E. PRATT ECN
4618	- ADAM PORTER ALT CLC HRB TBR	444	- BEVERLY J. PRECHT CLC TBR TRL
32	- DENNIS PORTER. CLC GEN RNG TBR WRA		WRA
20011	- J H PORTER CLC TRL	444	- E C PRECHTER CLC TBR TRL WRA
10165	- LAJOYCE PORTER CLC TBR	6415	- DAVID PRECO. ALT CLC ECN OLG RNG
3150	- ROBERT PORTER. CLC HRB		TBR VIS WRA
213	- WARREN PORTER ALT CLC REC	8830	- MARK PREOOVIC REC VIS WLD
2318	- MS LEAL PORTIS CLC TBR	8913	- MONIKA J PREISS ALT CLC ECN OLG
2293	- PORTLAND SAWMILL MACHRY BOB		RNG TBR VIS WRA
	DUNKEN. TBR	8120	- JOHN PRESCHUTTI ALT CLC H20 HRB
2900	- CATHERINE PORTMAN. CLC FLE TBR WRA		OLG RDSTBR WRA
3835	- D PORTNEY CLC FLE GEN HRB TBR	7688	- CATHERINE PRESTON ALT CLC REC TBR
1814	- PORTOLA CITY COUNCIL MAYOR SANDRA		TRL WRA
	WATERHOUSE. ECN GEN REC RNG WRA	2361	- DIANN PRESTON ALT CLC ECN HRB OLG
5269	- WAYNONA POSITERI ALT CLC ECN OLG		TBR WLD WRA
	RNG TBR VIS WRA	5928	- LOUISE PRESTON ALT CLC HRB RDS
5912	- DENNIS POSKUS ALT CLC HRB OLG REC	6179	- LOUISE PRESTON ALT CLC HRB
	RNG TBR WLD WRA	10823	- LOUISE PRESTON CLC HRB WRA
5916	- KAREN POSKUS ALT CLC HRB OLG REC	11651	- LOUISE PRESTON ALT CLC HRB
	RNG TBR WLD WRA	6829	- ANTHONY PRESUTTO CLC ECN HRB OLG
2879	- ROBERT S POST. ECN TBR		REC WRA
5026	- PAUL POSTON CLC TBR	7958	- SANDRA E PRETO ALT CLC TBR WRA
3884	- PAUL WOODWORTH POSTON CLC ECN	6002	- C PRICE ALT CLC ECN OLG RNG TBR VIS
3777	- BELLA POTAPAVSKAYA CLC OLG TBR		WRA
9206	- LAURA POTKIN CLC GEN HRB RNG TBR	5109	- CHRIS PRICE ALT CLC HRB OLG REC
893	- POTPOURRI THOMAS A LAWLER. TBR		RNG TBR VIS WLD WRA
6811	- HARRY I POTTER CLC TBR	5032	- EDMOND PRICE ALT CLC HRB OLG REC
10411	- JANET R POTTER ALT CLC TBR WRA		RNG TBR WLD WRA
1853	- GLEN POULSEN AIR H2O TBR	8745	- GLEN PRICE CLC HRB LND OLG RNG TBR
1420	- DENNIS R POULTER. TBR	11896	- GLENN PRICE CLC ECN HRB OLG TBR
10829	- JULIE POULTON CLC HRB OLG RNG TBR		WRA
	TRL	7911	- JIM PRICE REC WRA
3086	- H. POUNSHEND ALT ECN GEN	9212	- JOAN PRICE HRB RDS TBR
3085	- MARIAM POUNSHEND ALT ECN GEN	10512	- JOSEPH PRICE CLC HRB
10737	- ANDREW POWELL CLC OLG TBR WRA	5634	- JULIA PRICE ALT CLC HRB OLG REC RNG
9492	- B POWELL ALT CLC TBR WRA		TBR WLD WRA
902	- JACQUILINE POWELL. TBR	9086	- JULIA PRICE ALT CLC HRB OLG TBR WLD
901	- JOHN POWELL TBR		WRA
5792	- MIKE POWELL ALT CLC HRB OLG REC	533	- KEITH PRICE CLC HRB TBR WRA
	RNG TBR WLD WRA	1218	- KEITH PRICE GEN OLG VIS WRA
8823	- MIKE POWELL ALT CLC ECN HRB OLG	9052	- KEITH PRICE ALT CLC HRB OLG REC RNG
	TBR WLD WRA		TBR WLD WRA
2435	- ROBERT POWELL CLC FLE OLG RDS REC	8981	- NANCY PRICE ALT CLC HRB OLG TBR
	TBR		WLD WRA

3906	- RENE PRICE, ALT CLC HRB OLG REC RNG TBR WLD WRA	72	- DOROTHY E PURDY CLC FLE TBR
1308	- THOMAS C PRICE TBR	4151	- MARK PURDY REC WRA
7650	- IAN PRICHARD CLC ECN HRB TBR VIS WRA	10419	- HELEN PURELL CLC ECN HRB RECTBR WLD
9137	- JOHN T PRIDGEN ALT CLC H2O HRB OLG TBR WLD WRA	9092	- ANN PURIKS ALT CLC TBR WRA
10781	- KATHRYN PRIESTLEY CLC	6676	- DOUG PURKE ALT CLC ECN OLG RNG TBR VIS WRA
6247	- MARCO PRIETO ALT CLC HRB OLG REC RNG TBR WLD WRA	10312	- CHRISSY PUSATERI ALT CLC ECN OLG RNG TBR VIS WRA
158	- G. DEAN PRIGMORE CLC GEN HRB RDS RNG TBR	10313	- SHANON PUSATERI ALT CLC ECN OLG RNG TER VIS WRA
2218	- G DEAN PRIGMORE ALT CLC DRT H2O HRB TBR	746	- JAMES M PUTNAM ECN GEN
6606	- G DEAN PRIGMORE ALT CLC HRB OLG REC RNG TBR WLD WRA	8948	- MARGARET PUTT ALT CLC HRB OLG REC RNG TBR VIS WLD WRA
10018	- JENIFER PRILON CLC GEN HRB TBR	3028	- PRIVATE INDUSTRY COUNCIL OF BUTTE CO ECN GEN, TBR
3500	- DAVID PRINCE CLC TBR	5573	- DEBROTH PYESTRO ALT CLC HRB OLG REC RNG TBR WLD WRA
6819	- DAVID PRINCE CLC GEN TBR VIS WLD	5620	- J PYLE ALT CLC HRB OLG REC RNG TBR WLD WRA
8522	- GABE PRINDLE CLC OLG TBR WRA	379	- JIM PYLE CLC ECN HRB OLG RDS TBR
38	- MARK PRINGLE HRB TBR WRA	5819	- MATHEW PYLE ALT CLC HRB OLG REC RNG TBR WLD WRA
5047	- J.D. PRISMAN ALT CLC HRB OLG REC RNG TBR WLD WRA	8330	- SUSAN PYLE ALT CLC HRB OLG REC RNG TBR WLD WRA
7585	- KATHERINE PRITCHARD ALT CLC ECN OLG RNG TBR VIS WRA	6030	- KATHY QUACKENBUSH ALT CLC ECN OLG RNG TBR VIS WRA
6722	- DANIEL PRITCHETT CLC ECN TBR	6031	- PAUL QUACKENBUSH ALT CLC ECN OLG RNG TBR VIS WRA
10121	- JOHN PROCHASKA ALT CLC ECN OLG RNG TBR VIS WRA	11502	- QUALLES TRL
10087	- JIM PROCTOR ALT CLC HRB OLG REC RNG TBR WLD WRA	6720	- CHERYL QUALSET CLC OLG TBR
421	- ROBERT PROCTOR ECN GEN TBR	10267	- CHERYL QUALSET ALT CLC GEN TBR WRA
3852	- TRES PROSCH ALT CLC GEN HRB LND RECTBR	874	- DAN QUARTON TBR
6477	- CYNTHIA POWERS PROSOR ALT CLC HRB OLG TBR WLD WRA	873	- JAN QUARTON ECN TBR
6472	- LARRY PROSOR CLC ECN	5263	- DAVID QUENOLO ALT CLC ECN OLG RNG TBR VIS WRA
11195	- JUDY PROSSER ALT CLC HRB OLG TBR WLD WRA	10954	- ERIC QUEZADO ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
9913	- LARRY PROSSER ECN GEN TBR WRA	11199	- TAMARA QUICK ALT CLC ECN GEN OLG RNG TBR VIS WRA
10367	- PROTECT AMERICAN RNER CANYONS JANE MULDER ALT CLC DRT FLE H2O HRB LND OLG RDS REC RNA RNG SIA TBR TRL VIS WLD WRA WSR	8425	- DAVID QUIGG CLC
11249	- PROTECT AMERICAN RNER CANYONS JANE MULDER CLC RECTBR VIS WRA WSR	7943	- TODD QUILLICI ALT CLC ECN LND OLG RNG TBR VIS WLD WRA
11114	- PROTECT AMERICAN RNER CANYONS OTIS WOLLAN GEN TBR	11055	- ROXANNE QUILLEN ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
10378	- JAMES L PROTER, JR CLC HRB OLG WRA	1970	- MICHELEQUILLIN TBR
9873	- MAVIS PROUD ALT CLC HRB OLG TBR WLD WRA	3341	- LLOYD QUINAN REC
9166	- WILLIAM PROVANCE ALT CLC ECN OLG RNG TBR VIS WRA	7393	- AUSA QUINEY CLC OLG REC TBR WRA
3500	- MARQUERITE PROVECHER CLC TBR	10349	- CHRIS QUINN CLC OLG TBR WRA
4254	- KAREN PRUCHA CLC TBR WRA	3784	- JULIE QUINN ALT CLC ECN OLG RNG TBR VIS WRA
9478	- STEPHEN PRUCINI ALT CLC HRB OLG REC RNG TBR WLD WRA	658	- KEVIN QUINN ALT ECN WRA
6598	- BARTON PRUID ALT CLC ECN	4664	- LAURIE QUINN ALT CLC TBR WRA
562	- ZECH PU4RSCCELL CLC	709	- FRED P. QUINTERNO ECN TBR
6286	- STEPHEN PUCCINI ALT CLC REC TBR WRA	710	- LESLI ANN QUINTERNO TBR
9791	- M PUCCIO ALT CLC TBR WRA	3150	- AMY QUIRK CLC HRB
1309	- JULIE ANN PUGA ALT CLC ECN HRB OLG REC TBR VIS WLD	7858	- CARMEN QUMFANZ ALT CLC HRB OLG REC RNG TBR WLD WRA
1309	- CATHERINE M PUGA ALT CLC ECN HRB OLG REC TBR VIS WLD	1400	- R&G LUMBER CO INC GERALD R GLASS BURN GENTBR
8719	- PATRICK K PURCELL ALT CLC HRB OLG REC RNG SNP TBR WLD WRA	9621	- ROBERT R R CLC OLG TBR WRA
		8245	- FLORENCE & JOHN RAAB CLC TBR
		1000	- JONNE RAAB ALT CLC ECN HRB OLG TBR WRA
		10393	- DALLAS G RAARCH CLC ECN TBR
		10805	- WILLIAM RABOIRTE ALT CLC HRB OLG REC RNG TBR WLD WRA

9398	- KAREN RABRE ALT CLC TER WRA	881	- BOB RANDALL TER
10536	- CHRISTINE RACHAL CLC GEN HRE TER	7775	- DONALD B RANDALL TER
5933	- LINDA RACHMEL ALT CLC ECN OLG RNG TER TRL VIS WRA	8235	- JAMES & KATHRYN RANDALL CLC FSH GEN HRE RDSTER WRA
5910	- MICHAEL RADCLIFF ALT CLC HRB OLG REC RNG TER WLD WRA	20467	- JOHN RANDISH TER
5911	- LORNA RADCLIFFE ALT CLC HRE OLG REC RNG TER WLD WRA	6854	- CARLOS RANDOLPH ALT CLC ECN HRB OLG REC RNG TER WLD WRA
7617	- ALLEN RADEE ALT CLC TER WRA	6854	- DIANE L RANDOLPH ALT CLC ECN HRE OLG REC RNG TBR WLD WRA
3354	- JOHN RADFORD CLG HRE OLG RDS RNG TER VIS	7077	- CHARLES RANDOM ALT CLC ECN OLG REC RNG TER VIS WRA
2379	- PHIL RADSPINNER ALT CLC HRE TBR	3166	- ELIZABETH M RANEY ALT CLC HRE OLG TBR WLD WRA
7121	- PHILIP RADSPINNER ALT CLC ECN OLG RNG TBR VIS WRA	2982	- KEVIN E RANFILE ALT CLC HRB OLG TBR WLD WRA
2700	- MELODY RAGLIN ALT CLC GEN HRE OLG REC RNG TBR WLD WRA	10917	- SEFATOR RANING' ECN TER
5265	- FRANK RAGSDALE ALT CLC ECN OLG RNG TER VIS WRA	5691	- G. RANN ALT CLC HRE OLG REC RNG TER WLD WRA
2209	- JOHN RAGSDALE ALT CLC HRE OLG TBR WLD WRA	14	- KATERANNELLS CLC
2063	- CARL RAILLARD RDS TBR WRA	403	- SUSAN D RANNELLS CLC RNG TBR TRL WLD
8509	- LAUREL MARLEN RAIN ALT CLC DRT OLG TER WRA	3150	- K. RANSON CLC HRE
5393	- RAINBOW MTN INN ALT CLC HRB OLG REC RNG TER WLD WRA	11534	- GARY E RANZ CLC ECN FLE HRE
0225	- EDGAR A RAININ GEN REC	8222	- L RANZ' ALT GEN OLG WRA
3982	- FREDERICK RAID ALT CLC ECN HRE OLG RDS TER WRA	8404	- AVIS RAPPOPORT' ALT CLC ECN OLG RNG TBR VIS WRA
5908	- DAVID RAIRE ALT CLC ECN OLG RNG TBR VIS WRA	6949	- STEPHEN RARREN ALT CLC HRB OLG REC RNG TER WLD WRA
246	- WALT A RAITT' CLC ECN HRE REC RNG SIA TER WRA	2845	- PAT RASER CLC HRE REC WRA
2770	- KATHY RAJEK CLC H2O HRE WLD	6322	- SALLY J. RASK ALT CLC HRE OLG TER TRL WLD WRA
3701	- LINDA RAKESTRAW ALT CLC FLE HRE OLG RDS RNG TER WLD WRA	4012	- ANNE RASMUSSEN CLC ECN GEN HRE REC TER
7939	- LEA RALKIN ALT CLC ECN OLG RNG TBR VIS WRA	7423	- ANNE E RASMUSSEN' ALT CLC HRB OLG REC RNG TER WLD WRA
3557	- K. RALSTON CLC HRE RDS RNG WRA	3738	- CATHY RASMUSSEN ALT CLC HRE OLG REC RNG TER WLD WRA
4120	- K. RALSTON CLC HRB RDS RNG WRA	1699	- GLADYS RASMUSSEN CLC ECN HRB TBR VIS WRA
3891	- MR. & MRS RAMELLI CLC	3739	- GLADYS RASMUSSEN CLC HRE
941	- RAMELLI LOGGING, INC PAUL D RAMELLI' TER	3735	- JAMES RASMUSSEN ALT CLC DRT WLD
8957	- TIM RAMERS ALT CLC ECN OLG RNG TER VIS WRA	1728	- JAMES D RASMUSSEN CLC ECN HRE TER VIS WRA
7375	- CAITLIN RAMEY CLC ECN OLG TER WRA	4710	- KEVEN RASMUSSEN CLC
9066	- RIAL RAMINGER ALT CLC TER WRA	4353	- PARMALEE RASMUSSEN ALT CLC ECN HRE RDS TER WLD
6066	- TYRA RAMIREZ CLC RDS TER	4351	- RAYMOND RASMUSSEN' ALT CLC HRE TER TRL
1309	- TONY RAMIREZ ALT CLC ECN HRE OLG REC TER VIS WLD	6024	- SUSAN RASMUSSEN ALT CLC ECN OLG RNG TER VIS WRA
1309	- VICKIE RAMIREZ ALT CLC ECN HRB OLG REC TER VIS WLD	9854	- SUSAN RASMUSSEN ALT CLC ECN OLG RNG TER VIS WRA
6853	- OLGA RAMIREZ-KRAMBS' CLC TER	11338	- LAUREN RASSMUSEN-RANZ ALT CLC GEN HRE OLG TER
9974	- JASON RAMISSGTEN CLC GEN HRE TER	6200	- JOHANNA RASSMUSSEN ALT CLC HRE OLG REC RNG TER WLD WRA
7674	- AEEA RAMOS CLC OLG TER WRA	3406	- KEVIN RASSMUSSEN' CLC ECN FAC HRB MIN PLN RNG TER VIS
7084	- DENNIS RAMSEY' ALT CLC ECN OLG RNG TER VIS WRA	10212	- JILL S RATCLIFF' ALT CLC TER WRA
2640	- JOAN RAMSEY' ALT CLC HRE OLG TBR WLD WRA	11566	- ROEERTC RATH CLC
3222	- JOAN M RAMSEY CLC GEN OLG TBR WRA	8650	- WILLIAM RATHBURN ALT CLC ECN HRB OLG TBR WLD WRA
6953	- HAROLD H RAND ALT CLC HRB OLG REC RNG TBR WLD WRA	8526	- JEFF RATTO ALT CLC ECN OLG RNG TER VIS WRA
3887	- RANDY & DEIRDRE RAND CLC HRE TBR TRL VIS WRA	7124	- ROBERT RATTO ALT CLC ECN OLG RNG TER VIS WRA
8923	- DONNA T RANDA ALT CLC HRE OLG REC RNG TBR WLD WRA	3500	- T C RAUNNVILLE CLC TER
		5266	- GEORGENA RAUSCH ALT CLC ECN OLG RNG TER VIS WRA

11168	- GAIL RAUSCHER ALT CLC TBR	943	MARK REED FLE HRB TBR
7849	- D RAVERA ALT CLC TBR WRA	3174	PAMELA REED ALT CLC HRB OLG TBR
9866	- MARY RAVIZZA ALT CLC HRB OLG TBR		WLD WRA
	WLD WRA	12232	PAMELA REED CLC OLG TBR WRA
1450	- DIANNA RAWLEIGH ALT CLC REC	4297	FREDER REED ALT CLC ECN OLG RNG
6741	- BARBARA M RAWLES ALT CLC HRB OLG		TBR VIS WRA
	REC RNG TBR WLD WRA	3866	TED REED TBR
2755	- BRUCEA RAWLES CLC	4697	TINA REES CLC
3775	- KRISTEN RAWLES CLC	4240	PATRICIA REESE CLC ECN FAC HRB MIN
7916	- WILLIAM RAWLEY, MD CLC REC		OLG PLN RNG TBR TRL VIS
10601	- ERMA R RAY CLC H20 HRB REC TBR VIS	2024	VADLESS REESE ALT ECN GEN
8287	- MARY ANN RAY ALT CLC ECN FLE OLG	1818	DON REEVES GEN TBR
	RNG TBR VIS WRA	4770	MARIE REEVES CLC GEN OLG TBR WRA
10929	- RAY SAUTO RADIO SALES L D SCHMIDT	3042	TIM REEVES CLC
	CLC TBR	1479	TINA REEVES CLC TER WLD
6680	- O B RAY, III ALT CLC HRB OLG REC RNG	2707	VIRGINIA REEVES CLC WRA
	TBR WLD WRA	1171	KATHLEEN A. REGAN CLC
5714	- JENNIFER RAY-SANGER CLC	7347	ANGELA REID ALT CLC TBR WRA
6066	- ALMA RAYAS CLC RDS TBR	6768	WENDY REID ALT CLC HRB OLG REC
7416	- JANE RAYBERG ALT CLC HRB OLG REC		RNG TBR WLD WRA
	RNG TBR WLD WRA	2930	FREDERICK REIF ALT CLC HRB OLG RDS
9576	- ROBIN RAYERWEIZ CLC OLG TBR WRA	3499	TBR WLD WRA
2679	- TERRY RAYMER CLC HRB		MOON REILLY CLC DRT OLG RDS WLD
1681	- KAREN RAYMOND CLC RDS TBR TRL VIS	9619	WRA
6264	- JESSI RAY ALT CLC TBR WLD WRA	7574	MOON REILLY ALT CLC TBR WRA
2937	- JELDON P RE A CLC HRB OLG		JO ELLEN REIMER ALT CLC ECN OLG
	TBR WLD WRA	2619	RNG TBR VIS WRA
7034	- KEITH RAYNOR ALT CLC TBR WRA	3187	PAULINE REINHART CLC HRB
4373	- CINDY READ CLC		FRANCESCA REITANO ALT CLC FLE HRB
982	- JOHN T READER ECN TBR VIS	6886	OWL REC
6593	- BAIN & PEGGY REAMER CLC ECN REC		MARCOL & ERICKA REJMONUH ALT CLC
	TBR	4728	ECN GEN OLG RNG TBR VIS WRA
6944	- DEBORAH C. REATH ALT CLC TBR TRL	2305	ANDREA RELLSTAE CLC
	WRA		ROBBIN W REMPEL RPF ALT ECN GEN
6870	- BOB REAVIS ALT CLC WRA	3406	H20 RDS TBR WRA
2372	- JOHN REAY CLC TBR VIS		DAWN RENFROW CLC ECN FAC HRB MIN
3150	- GLADYS RECCE CLC HRB	4722	PLN RNG TBR VIS
7198	- JUDITH ANN RECCHIO ALT CLC TBR WRA	4421	DAWN RENFROW CLC
7197	- LINDA C. RECCHIO ALT CLC TBR WRA		WILLIAM RENFROW & CARMEN RETAL-
5651	- MICHAEL RECCLIAN ALT CLC HRB OLG	419	LACK ALT ECN TBR
	REC RNG TBR WLD WRA	4857	SALLY RENLUND TBR
9958	- DAVIA RECKS CLC GEN HRB TBR		JONATHAN RENNER ALT CLC HRB OLG
2103	- REDDING LUMBER TRANSPORTAL SHUFEL-	10863	REC RNG TBR WLD WRA
	BERGER ECN GEN REC TBR	2528	COLBY RENNEST CLC
4367	- THOMAS REDDOCLE ALT CLC ECN OLG	2538	JAMES G RENNIE CLC OLG TBR WRA
	RNG TBR VIS WRA		JAMES G. RENNIE ALT CLC HRB OLG TBR
9019	- NANCY M. REDE ALT CLC ECN HRB OLG	2534	WLD WRA
	RNG TER VIS WRA		MARCIA J. RENNIE ALT CLC HRB OLG
5769	- DONNA REDEN ALT CLC HRB OLG REC	93	RDS TBR WLD WRA
	RNG TBR WLD WRA		TANYA RENTZ-KEEHN ALT CLC HRB REC
142	- HERB REDLACK CLC ECN	6834	WRA
1631	- MARSHALL REDMON CLC HRB	6499	DANIEL W. REPP CLC HRB OLG TBR WRA
9218	- JUDITH REDMOND CLC ECN HRB TBR		PETER RERIEHERT ALT CLC HRB OLG
	WLD	3w7	REC RNG TBR WLD WRA
6066	- REDWOOD CHRSTN SCHOOL CLC RDS		KATHLEEN L RERSWIG ALT CLC HRB
	TBR	9541	OLG TBR VIS WSR
5621	- ALMA REED ALT CLC HRB OLG REC RNG	7570	PETER RESENDES CLC
	TBR WLD WRA		THOMAS RESETAR ALT CLC ECN OLG
7059	- BARBARA REED ALT CLC HRB OLG REC	5104	RNG TBR VIS WRA
	RNG TBR WLD WRA		SCOTT RESETER ALT CLC HRB OLG REC
7052	- DAVID REED ALT CLC ECN HRB OLG REC	4952	RNG TBR WLD WRA
	RNG TBR WLD WRA		LEO RESTGEN AIR ALT CLC HRB OLG
7292	- HEATHER ANGELA REED ALT CLC TBR	8484	REC TBR WLD WRA
	WRA	1801	DAN & JONI RETUTA CLC
2743	- MARJORIE & CLYDE REED VIS	4940	JONI RETUTA CLC ECN
5915	- MARJORIE E REED ALT CLC HRE OLG		JONI RETUTA ALT CLC ECN OLG RNG
	REC RNG TBR WLD WRA	6652	TBR VIS WRA
			JONI RETUTA ALT CLC ECN OLG RNG
			TBR VIS WRA

3192	• KIM REUSSER TER	9032	- REX RICHARDSON. ALT CLC HRE OLG
5672	• JAMES REUTHER ALT CLC HRB OLG REC		REC RNG TER WLD WRA
10557	• BRIAN REUTSCHEER CLC GEN HRB TBR	10951	• R M RICHARDSON CLC HRE RDS TRB
10920	• JAN REVERS ALT CLC TBR WRA	7071	- LARRY RICHELL ALT CLC HRE OLG REC
9471	• CHRISTINE A R M ALT CLC ECN OLG		RNG TER WLD WRA
10266	• MONA L RMEL ALT CLC TBR WRA	1785	• SHERLEE RICHINS CLC
5948	• MARY RMFORD, PHD ALT CLC ECN H2O	8605	• TED RICHMAN ALT CLC HRB OLG TBR
	HRE REC TER VIS		WLD WRA
8386	- ALNAIR REYES ALT CLC HRE OLG TBR	134	• NATALIE RICHMOND CLC HRB RDS TBR
	WLD WRA	9793	- RANDY RICKARE ALT CLC TER WRA
10197	- JENELLE REYES CLC HRB TBR	2123	- RON RICKER CLC ECN HRB TBR
7293	- MARIA P REYES ALT CLC TER WRA	1309	• JAMES R RICKS ALT CLC ECN HRE OLG
3149	- SOCORRO REYES TBR		REC TER VIS WLD
4763	- AVIS REYNOLDS CLC OLG TER WRA	1785	- LLAHL RIDD CLC
8041	- BEA REYNOLDS ALT CLC ECN OLG REC	11175	• CHRISTINE RIDDELL CLC HRB RDS TBR
	RNG TBR VIS WRA	6717	• JIM RIDDLE CLC HRB OLG TER
5313	- DOUG REYNOLDS ALT CLC HRE OLG	12102	• JIM RIDDLE CLC HRE OLG VIS WRA
	REC RNG TER WLD WRA	6699	• CHARLOITE C RIDER ALT CLC HRE OLG
2532	- JEFF REYNOLDS CLC TER		REC RNG TBR WLD WRA
4765	• LESLIE O. REYNOLDS CLC OLG TER WRA	8508	• LARRY RIDER CLC OLG TER WRA
5413	• LOUIS E REYNOLDS. ALT CLC ECN OLG	6219	• MICHELE RIDER ALT CLC ECN OLG RNG
	RNG TBR VIS WLD WRA		TBR VIS WRA
1323	- MR & MRS. RICHARD REYNOLDS ALT	6853	• FREDERICK D RIDMORE' CLC TBR
183	- PAT REYNOLDS. CLC HRB RDS TER	3974	• JEAN RIDONE CLC ECN HRB TER VIS
7026	- PAUL REYNOLDS ALT CLC TBR WRA		WRA
6563	- R W. & CLARK REYNOLDS ALT CLC HRE	4456	• JEAN RIDONE REC WRA
	OLG REC TER WLD WRA	8265	• DON RIEDEL' ALT CLC ECN OLG REC RNG
6196	• WALTER T RHOADS. ALT CLC TER WRA		TER VIS WRA
8365	MICHAEL RHODES. ALT CLC HRE OLG	5433	• GARY RIES CLC
	TER WLD WRA	5926	- CRAIG RIESER ALT CLC ECN OLG RNG
2962	NORM & LOREE RHODES ALT CLC HRE		TBR VIS WRA
	OLG TER WLD WRA	398	• JOYCE C RIETZ REC TBR WRA
9591	- R J RHODES ALT CLC HRB OLG TBR WLD	1309	ROBERT E RIFFE. ALT CLC ECN HRE OLG
	WRA		REC TBR VIS WLD
9673	- TIMOTHY RHURARL: ALT CLC TER WRA	2315	• TIMOTHY RIFFEL TBR
8025	- SHERRY RIANKE. ALT CLC ECN OLG RNG	9318	• CHRISTOPHER M RIGGIO ALT CLC HRE
	TER VIS WRA		OLG REC RNG TER WLD WRA
2566	• JONATHAN RIARMAN. CLC	4577	• DANIEL RIGGLEMAN ALT CLC
10532	• DAVE RIBERTS CLC GEN HRB TER	1871	• DOLAN W RIGSBY ECN GENTER
10248	• LISA RIBONSON' CLC HRB OLG TER WRA	8214	• YANEY RIGSLIEE ALT CLC HRE OLG REC
1298	• JEFFREY D RICE CLC ECN TER		RNG TBR WLD WRA
6352	- SANDRA RICE. ALT CLC HRE OLG REC	6696	- ALLAN RILEY, ALT CLC ECN OLG RNG TER
	RNG TER WLD WRA		VIS WRA
9473	- T RICE. ALT CLC TER WRA	241	ANN & TERRY RILEY CLC HRE
7634	- TIMOTHY RICE ALT CLC TER WRA	428	- CHUCK RILEY GEN
8531	- LEE R. RICH. ALT CLC ECN OLG RNG TER	11209	• CHUCK RILEY' GENTER WRA
	VIS WRA	5466	- DOYNE RILEY ALT CLC ECN OLG RNG
11300	- MOLLIE RICH CLC HRE RDS TER		TER VIS WRA
7842	- KATHLEEN RICHARD ALT CLC TBR WRA	9250	• GAIL RILEY' AIR CLC FLE H2O HRE OLG
2043	- ERIC RICHARDS CLC ECN REC WRA		RNG TER TRL VIS
1308	• JOHN RICHARDS TER	4402	• GLEN W. RILEY CLC
2	• MICHELLE G RICHARDS ALT CLC HRB	5467	- J. RILEY. ALT CLC ECN OLG RNG TER VIS
	RNG TBR WRA		WRA
1890	• R RICHARDS CLC OLG TER WRA	3570	• JILL RILEY CLC H2O HRE WRA
3	• ROBERT F RICHARDS. ALT CLC HRB RNG	5464	- JILL RILEY ALT CLC ECN OLG RNG TER
	TBR WRA		VIS WRA
2996	- DARYL RICHARDSON FSH GEN REC	9384	• JOHN F RILEY' ALT CLC HRE OLG REC
8493	• DONNA RICHARDSON CLC DRT		RNG TBR WLD WRA
2112	• HIEM RICHARDSON ALT TER	7851	• MELINDA RILEY ALT CLC TER WRA
7618	• M RICHARDSON ALT CLC TER WRA	20000	• ROBIN RILEY CLC
8121	• MARC S RICHARDSON, ALT CLC	22	- TERRY RILEY CLC ECN HRB TBR
971	• MARK RICHARDSON ALT CLC ECN H2O	6879	• ANTERO A & MELINDA FINASPLATA ALT
	HRB OLG		CLC ECN HRB REC TER TRL WRA
7226	• MICHELE RICHARDSON ALT CLC HRB	9622	• JOANNE RINGLER CLC OLG TBR WRA
	OLG REC RNG TER WLD WRA	10600	- RONALDRINGLER CLC H2O HRE REC
5830	• MILES RICHARDSON ALT CLC HRB OLG		TER VIS
	REC RNG TER WLD WRA	2292	• RINN-SCOTT LUMBER CO MICHAEL ELY
			TBR

965	LEE RINSON TBR	5342	• RANDI ROBERTS ALT CLC ECN OLG RNG TBR VIS WRA
9444	E O RIOS ALT CLC ECN OLG RNG TBR VIS WRA	9747	- ROSE MARIE ROBERTS ALT CLC ECN OLG RNG TBR VIS WRA
9445	PEDRO RIOS ALT CLC ECN OLG RNG TBR VIS WRA	5267	- CHARLES ROBERTSON ALT CLC ECN OLG RNG TBR VIS WRA
9125	- RIPPI PARETTI ALT CLC ECN GEN OLG RNG TBR VIS WRA	3726	- JACK ROBERTSON ALT CLC HRB OLG TBR WLD WRA
6749	- R L RIPPÉE ALT CLC H2O HRB OLG TBR TRL WLD WRA	3814	- MARCEUE ROBERTSON ALT CLC HRB OLG TBR WLD WRA
7000	- RITA RIPPPELVE ALT CLC TBR WRA	10056	- PATTY ROBERTSON ALT CLC ECN OLG RNG TBR VIS WRA
1309	- ELYPSE M RISHWAIN ALT CLC ECN HRB OLG REC TBR VIS WLD	8583	- CEEETH ROBHS ALT CLC HRB OLG REC RNG TBR WLD WRA
2352	- KEN RISLEY, GEN MGR ECN GEN	1407	- ROBIN CLC
633	- ADRIAN RISSLER CLC RDS TRL	1986	- CARLENE ROBINSON ALT ECN GEN
445	- ROBERT RIST, GEN TBR	3290	- CHERYL ROBINSON CLC
10774	- KIM RISUCCI ALT CLC HRB OLG REC TBR WLD WRA	2893	- CHRISTY ROBINSON TBR
2122	- GAILA RITCH CLC TBR	6142	- GEORGE ROBINSON ALT CLC TBR WRA
3455	- MARJORIE RTTCH & GILBERT MERRITT ALT CLC HRB OLG REC RNG TBR WLD WRA	9367	- JONI ROBINSON WLD WRA
9441	- RON RTTCHEY, ALT CLC ECN OLG RNG TBR VIS WRA	8046	- JUDI ROBINSON ALT CLC ECN H2O OLG RNG TBR VIS WLD WRA
11154	- LOHS RITEYER CLC HRB RNG TBR TRL	7392	- KENYATTA ROBINSON CLC OLG TBR WRA
9755	- JEFF RITSCHARO ALT CLC TBR WRA	8718	- KEVIN S ROBINSON ALT CLC OLG WRA
11302	- K.H RITTER REC	788	- LOWELL ROBINSON ECN OWL TBR VIS WRA
8865	- PETER RIVARA ALT CLC HRB OLG TBR WLD WRA	11142	- LOWELL ROBINSON' ECN GEN PLN TBR WRA
7622	- ELIZABETH RIVERA ALT CLC TBR WRA	1294	- MICHAEL ROBINSON ALT CLC ECN HRB RDS RNG TBR WIN W
3248	- KATHY RIVERS ECN GEN	6089	- ORKWIS ROBINSON CLC ECN HRB TBR WRA
3329	- KATHY RIVERS EN TBR W	8100	- ROBERT ROBINSON AIR CLC ECN FSH H2O HRB OLG REC TBR TRL VIS WLD
3503	- KATHY RIVERS LT GEN	6877	- SARAH ROBINSON HRB PLN REC RNG
1107	- WALTER RIVERI REC WI	11800	- SARAH ROBINSON CLC HRB
3577	- THOMAS RIVES ALT CLC HRB OLG TSR W D WRA	10166	- STACY ROBINSON, CLC TBR VIS WLD
5174	- DI VRAN ET ALT CLC E OLG RN E TBR VIS WRA	6945	- SUSAN J ROBINSON ALT CLC TBR WRA
10039	- SHAUNA RIZZO, CLC GEN HRB TBR	4875	- TED ROBINSON ALT CLC HRB OLG REC RNG TBR WLD WRA
8396	- NICOLA M RC ALT CLC HRB TBR	1027	- THELMA J ROBINSON ALT ECN TBR
9963	- RANFRY ROAL ALT CLC HRB TBR	963	- TOSHH ROBINSON GEN
6853	- BECKY BAF E CL R	20514	- WENDELL J ROBINSON TRL
6176	- KATHY ROBBINS ALT CLC OLG REC RNG TBR WLD WRA	6343	- WILLIAM S ROBINSON CLC TBR
10699	- LINDA D ROBBINS ALT CLC ECN H2O OLG REC RNG TBR VIS WLD WRA	704	- ROBINSON ENTERPRISES JEFF CHRISTENSON RECTBR
4629	- MARYA ROBBINS ALT H2O OLG TBR WLD	11121	- ROBINSON ENTERPRISES JOE GRIGGS ECN GEN TBR
8345	- MARYA ROBBINS ALT CLC HRB OLG TBR WLD WRA	2599	- JEAN ROBISON TBR
10208	- STEPHEN ROBBY LT O TBR WRA	2614	- LESTER ROBISON, TBR
7534	- CHESTER ROBERSON ALT CLC GEN HRB OLG REC RNG TBR W D W W	1309	- KATHLEEN ROBLES ALT CLC ECN HRB OLG REC TBR VIS WLD
5563	- STACEY R. ROBERT ALT CLC HRB OLG REC TBR WLD WRA	5299	- TRUDI ROBLES ALT CLC ECN OLG RNG TBR VIS WRA
6162	- BETHI ROBERT CLC	6604	- MINDY ROCHELL ALT CLC HRB OLG REC RNG TBR WLD WRA
9090	- CHRISTINE ROBERT ALT CLC TBR WRA	6558	- CATHERINE ROCHSTEINER CLC
6497	- DAVID ROBERTS ALT CLC ECN OLG RNG TBR VIS WRA	3150	- STEVEN ROCK CLC HRB
9827	- DAVID ROBERTS CLC GEN OLG TBR WRA	4874	- TONYA ROCKER ALT CLC HRB OLG REC RNG TBR WLD WRA
3111	- DEE ROBERTS, ALT ECN GEN	1054	- JEFFREY R ROCKHOLM ALT CLC TBR WRA
9365	- DOUG ROBERTS ALT CLC H2O HRB REC TBR WLD WRA	7267	- C ROCKLIN ALT CLC TBR WRA
6596	- EVELYN ROBERTS ALT CLC HRB OLG TBR WLD WRA	7160	- CHARLES ROCKLIN ALT CLC TBR WRA
10505	- RAN K E ROBE ALT CLC HRB OLG TBR WLD WRA	3310	- ROCKLIN CHAMBER OF COMMERCE THEODORE A BRAVOS CLC ECN TBR
519	- JOHN ROBERTS TBR	8773	- KAY & DOUG ROCKWELL ALT CLC ECN OLG REC RNG TBR VIS WRA
9640	- MARC ROBERTS ALT CLC TBR WRA		
9748	- OWEN ROBERTS ALT CLC ECN OLG RNG TBR VIS WRA		

1020	- TEED ROCKWELL. CLC ECNTBR	11212	- TERRY ROGERS. TBR
1010	- MAIYARODD CLC	9767	- W ROGGE ALT CLC TBR WRA
461	- MAYARODD CLC	6423	- KIM ROGH ALT CLC HRB OLG REC RNG TBR WLD WRA
10724	- DALE RODDY CLC OLG TBR WRA		- VIRGINIA K. ROHDE CLC
9636	- RANDALL RODDY CLC ECN HRB TBR VIS WRA	2573	- MARGARET R ROISMAN CLC ECNTBR WRA
2517	- STEVE RODDY ALT CLC HRB OLG TBR WLD WRA	1355	- MELANIE ROJAS CLC TBR
2028	- GLEN Roderich ALT ECN GEN	4579	- R ROLAND CLC HRB TBR
1993	- MARTHA Roderick. ALT ECN GEN	4549	- JANIE ROLD ALT ECN GEN
10649	- CHUCK RODERT ALT CLC FSH HRB OLG REC TBR TRL WLD WRA	2462	- WANDA ROLEINSON GEN TBR
6048	- FRANK RODGERS ALT CLC ECN OLG RNG TBR VIS WRA	1254	- LEA ROLFSEN ALT CLC TBR TRL VIS
3500	- KATHLEEN RODGERS CLC TBR	2422	- R ROLLER CLC
10071	- LUKE RODGERS. ALT CLC ECN OLG RNG TBR VIS WRA	10581	- M M ROMAN & CYNTHIA METZLER CLC GEN RDS VIS
7327	- MARY RODGERS ALT CLC HRB OLG TBR WLD WRA	229	- DIANE ROMANI ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
1445	- SANDRA RODIMAN CLC GEN HRB OLG TBR VIS	11004	- J ROMERO. CLC TBR
7383	- MARIA RODONGALEZ CLC OLG TBR WRA	3407	- KATHY ROMERO. ALT CLC TBR TRL WRA
1564	- BARBARA & JOE RODOWIEZ CLC HRB	2484	- KEN ROMERO ECN TBR
11153	- P. RODRICK REC	1454	- E J ROMESBERG TBR
3588	- THERESA RODRIGUES ALT CLC HRB OLG REC RNG TBR WLD WRA	20502	- RUTH E RON CLCTBR
2646	- SYLVIA RODRIGUEZ. CLC OLG TBR WRA	6853	- RON LANDSBURG LOGGING RONALD R LANDSBURG. REC TBR WLD
5647	- TERRY RODRIGUEZ. ALT CLC ECN OLG RNG TBR VIS WRA	624	- RON LANDSBURG LOGGING SALLY A LANDSBURG TBR VIS
10993	- MARK RODRIGUEZ ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	675	- MARIE A. RONDABUSH ALT CLC HRB OLG TBR WLD WRA
5272	- NORMA RODRIQUES ALT CLC ECN OLG RNG TBR VIS WRA	9873	- LILLIAN ROOD ALT CLC HRB OLG REC RNG TBR WLD WRA
6273	- IDA RODRIQUEZ ALT CLC TBR WRA	5277	- JOSHUA ROOM ALT CLC OLG TBR WRA
8862	- DOUGLAS B RODUCK ALT CLC HRB OLG RNG TBR TRL WLD WRA	7651	- CAROL ROOS ALT CLC HRB OLG REC RNG TBR WLD WRA
2508	- G WILLIAM ROEHR ALT CLC REC TBR WLD	6847	- ERIK ROOS ALT CLC HRB OLG REC RNG TBR WLD WRA
3571	- JUDITH M ROEHR. ALT CLC HRB OLG TBR WLD WRA	5328	- CAROL M ROOS-SHERMAN ECN TBR
11389	- MARY ROEHR CLC ECN REC TBR TRL WIN	626	- CAROL M ROOSSHERMAN. ECN TBR
2182	- MARY E. ROEHR ALT CLC ECN	664	- DON ROOSE CLC TBR
9804	- A N ROGEH CLC ECN HRB REC TBR VIS WRA	3500	- JUDITH ROPEZYKA ALT CLC ECN OLG RNG TBR VIS WRA
8560	- JOSHUA ROGER CLC GEN OLG TBR WRA	7096	- RUNEI RORS ALT CLC HRB OLG TBR
8007	- RUSSELL E ROGERGS CLC REC VIS	6464	- CAROL ROSA ALT CLC HRB OLG REC RNG TBR WLD WRA
9265	- ANGÉLIQUE ROGERS CLC HRB	5851	- VINCENT ROSALES CLC FSH HRB TBR
2213	- ANNROGERS CLC	3213	- PATRICIA ROSAUER REC
3559	- CELESTE ROGERS AIR DRT H2O REC TBR	8807	- MARY LOU ROSCZYK CLC RNG TBR
357	- JASON ROGERS CLC SNP TBR WLD	537	- AYLAROSE CLC HRBRECTBRTRL
11768	- JASON ROGERS CLC	4172	- DAVE ROSE CLC TBR
1872	- JOEY D ROGERS. ECN GENTBR	2164	- GEOFF ROSE ALT CLC HRB OLG TBR WLD WRA
6655	- JOYCE ROGERS ALT CLC ECN OLG RNG TBR VIS WRA	4797	- JAMES V. ROSE TBR
2921	- KAREN ROGERS ALT CLC H2O OLG REC RNG TBR WLD	1133	- JAN & CHARLES ROSE CLC TBR
1962	- LISA ROGERS CLCHRB	6577	- JOHN M ROSE. CLC HRB REC TRL WIN
385	- MIKE ROGERS ECN TBR	6629	- JULIE ROSE, CLC
5478	- SAM ROGERS. ALT CLC ECN OLG RNG TBR VIS WRA	1071	- KATHY ROSE ALT CLC TBR WRA
457	- SCOTT ROGERS CLC REC TBR WLD WRA	9626	- RICHARD ROSE ECN GEN
835	- SCOTT ROGERS CLC DRT HRB LND RDS REC TBR WRA	1837	- VIRGINIA ROSE ECN GEN
2327	- SCOTT ROGERS ALT CLC ECN FLE HRB TBR	1835	- ALAN B. ROSEAN ALT CLC HRB OLG WRA
5660	- SCOTT ROGERS ALT CLC ECN OLG RNG TBR VIS WRA	2280	- ROSEBURG FOREST PRODUCTS RICHARD ROSEBERRY. ALT
		2278	- PATRICIA A ROSEFIELD ALT CLC HRB OLG REC RNG TBR WLD WRA
		4927	- DAN ROSENBERG ALT CLC HRB OLG REC RNG TBR WLD WRA
		3584	- DAN ROSENBERG CLC OLG TBR
		5934	- J. ROSENBERG ALT CLC HRB OLG REC RNG TBR WLD WRA
		8183	- KATHLEEN ROSENBERG. ALT CLC HRB OLG REC RNG TBR WLD WRA
		4200	

20500	- Q J ROSENBERG. TRL	3116	- DEBBIE ROWELL. ALT ECN GEN
10821	- ALAN ROSENBLOOM' CLC ECN GEN HRB OLG RDS REC TBR VIS	2002	- GEORGE R ROWELL. ALT ECN GEN
11648	- ALAN M ROSENBLOOM: CLC ECN HRB OLG TBR VIS	1306	- ROBERT E ROWELL. CLC TBR
2756	- POLLY S ROSENBERG CLC	3719	- G MCMAHON ROWLAND CLC DRT FLE GEN H2O HRB TBR WLD
2371	- JEAN A LD. CLC TBR WLD	5049	- KATHY ROWLAND. ALT CLC HRB OLG REC RNG TBR WLD WRA
8295	- LES ROSENILAL. LC OLG TBR WRA	1309	- JIM W ROWLETT ALT CLC ECN HRB OLG REC TBR VIS WLD
3179	- BETRICE ROSENT HOL CLC	10131	- RUSSELLO ROY' ALT CLC ECN OLG RNG TBR VIS WRA
1262	- JIM ROSENTHRETE I. ECN TBR	10132	- VIRGINIA & THOMAS ROY: ALT CLC ECN OLG RNG TBR VIS WRA
5260	- RUTH ANN ROSH. ALT CLC ECN OLG RNG TBR WRA	6645	- LEROY ROYBAL' TBR
10464	- ANN W ROSS ALT CLC WRA	3456	- JOHN ROYERS' CLC HRB RNG
3938	- CHARLES ROSS. ALT CLC H2O IB C TBR TRL VIS WLD WRA	2627	- PHYLLIS ROYLE ALT CLC HRB OLG TBR WLD WRA
10462	- DOUGLAS A ROSS ALT C TBR WRA	€21	- VINCENT MICHAEL RUBINO ALT CLC HRB OLG TBR WLD WRA
4780	- HELEN ROSS. CLC OLG TBR WRA	1177	- ANITA RUBIO ECN
464	- JED ROSS TBR	1250	- ASCENSION & ANITA RUBIO TBR
4191	- MR & MRS DE R CLC	1138	- MICHELLE RUBIO ECN TBR
3514	- MRS DONALD F F SE EC 'S	10827	- LAURA RUCEDA ALT CLC HRB TBR
6149	- PENNY ROSS. LT CL TBR V RA	11015	- LIZ RUCH' ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
2648	- SUSAN ROSS' LC CLC TE V	2001	- PATRICIA A RUCHIN ALT ECN GEN
1627	- ROSS EQUIP NT II R D. C	6903	- IRENE H RUCKEY GEN
3008	- J J ROSS, JR. ALT CLC H2O HRB OLG TBR TRL IS WLD WRA	11433	- LAURA RUCOBA CLC H2O HRB REC TBR TRL VIS WLD
10930	- PARY ROSSI. ALT CLC TBR	7661	- ROBERT RUDELL CLC GEN OLG TBR WRA
10469	- PAT ROSSMAN. ALT CLC TBR WRA	1633	- MRS H.I RUDDUCK. ECN
251	- ANTONIO ROSSMANN, ATT-AT-LAW' TRL WRA	10303	- BRIAN RUDOLFS ALT CLC ECN OLG RNG TBR VIS WRA
7212	- LADORA ROSSO' ALT CLC HRB OLG REC RNG TBR WLD WRA	2781	- ALLEN RUDOLPH' ALT CLC GEN HRB OLG TBR WLD WRA
9940	- ANTHONY ROTH. CLC GEN HRB TBR	3453	- CAROLINE RUEB CLC TBR
7615	- HUGH D ROTH ALT CLC TBR WRA	7307	- KLAUS RUECLIGER ALT CLC HRB OLG REC RNG TBR WLD WRA
3165	- H H L ROTH: CLC HRB OLG RDS TBR	3859	- JANET L RUEGER, D.C. ALT CLC HRB OLG TBR WLD WRA
5078	- H H A ROTH: ALT CLC ECN OLG RNG TBR VIS WRA	2995	- DOROTHY RUESSE GEN RNG TBR TRL VIS (FAMILY) RUESTOWS' CLC HRB OLG RNG TBR WRA
5951	- MIRA RC ALT CLC ECN OLG RNG TBR VIS WRA	2813	- ANDREW RUFF CLC TBR
226	- VICTOR ROTH ECN GEN WRA	6853	- ROBERT RUFFNER. CLC HRB RDS
200	- RA ROTHACKER LND TBR	8639	- SHARON RUFFNER CLC HRB RDS TBR
8687	- RONALD A ROTHACKER H2O HRB OLG REC TBR WLD WRA	6155	- ROBERT RUFFNER, II CLC HRB RDS TBR TRL WLD
5485	- TANYA R HCHILD ALT CLC ECN OLG RNG TBR WRA	11641	- MICHAEL RUGGE CLC ECN HRB TBR VIS WRA
8134	- BRAI RY DTH S CLC H TBR	6316	- MICHAEL RUGGE CLC HRB TBR
7502	- CINDY ROTIE: ALT CLC R OLG REC RNG BR WLD WRA	11141	- CHARLESC RUIT CLCECNFSHGEN HRB TBR
7156	- ETHAN R F TAN ALT C TBR WRA	2330	- JUNE C RUKMAN ALT CLC ECN OLG RNG TBR VIS WRA
10381	- DOUGL S ROTZ: F	8902	- LINDA RUUY ALT CLC ECN OLG RNG TBR VIS WRA
5228	- DOUGLAS ROUZH' ALT C HRB OLG REC RNG TBR WLD WRA	10095	- DAVID RUMMLER CLC ECN HRB REC RNG TBR
6817	- GREG ROJK' TBR	12000	- DAVID A RUMMLER. ALT RDS RNA RNG WLD WRA
914	- ILA F ROUSE. SH GEN' WLD	923	- DAVID, RICHARD & MILDRED RUMMLER CLC ECN HRB REC RNG TBR
2179	- MR & MRS D L ROUSE' ALT CLC GEN HRB OLG TBR WLD WRA	1044	- RUNNINGTIMES ED AYRES CLC ECN TBR
10589	- MARIE ROVAEBRUSH ALT CLC HRB OLG TBR WLD WRA	20512	- NANCY RUPPERT CLC HRB OLG TBR
1413	- LUCILLE ROVNAK CLC HRB OLG TBR WIN WRA	165	- GEORGE J RUSCH CLC ECN REC TBR VIS WRA
1043	- JULIE ROWAN CLC TBR	1095	
8216	- JULIE ROWAN CLC DRT H2O HRB OLG RDS RNG TBR WLD		
3219	- ANDREW ROWE CLC ECN HRB TBR VIS WRA		
5670	- DONNA GRAHAM ROWE. ALT CLC ECN OLG RNG TBR VIS WRA		
7215	- MAXINE L ROWE ALT CLC HRB OLG REC RNG TBR WLD WRA		

6372	DARLENE RUSH ALT CLC HRB OLG REC RNG TBR WLD WRA	3947	• KARIN SABLE CLC H2O HRE TER VIS
5077	MARTIN RUSH. ALT CLC ECN OLG RNG TER VIS WRA	2320	• ROBERT SAELESKI CLC HRB WLD
2011	MARY RUSHING. ALT ECN GEN	6876	• ROBERT SABLESKI CLC
10289	VERA RUSSANOW ALT CLC FSH HRB TER TRL WRA	9608	• ROBERT SAELESKI ALT CLC TBR WRA
4347	GAYLE RUSSEL ALT CLC FSH OLG WRA WSR	11501	• ROBERT SABLESKI CLC ECN TER
10042	- DIANNA RUSSELL CLC GEN HRE TER	4391	• STEPHEN SAC ALT CLC HRE RDSTBR WRA
6229	- DONALD RUSSELL ALT CLC HRB OLG REC RNG TER WLD WRA	2546	• JIM SACCOMANNO ALT CLC HRE OLG TBR WLD WRA
10346	- EDWARD W RUSSELL REC WRA	4842	• MIKE SACLE ALT CLC HRE OLG REC RNG TBR WLD WRA
3024	• GAYLE RUSSELL ALT CLC ECN HRB OLG TBR	4835	• SUNKA SACMDGU ALT CLC HRE OLG REC RNG TBR WLD WRA
3048	- GAYLE RUSSELL ALT CLC HRE OLG REC RNG TBR WLD WRA	6134	• PAMELA SAFFER ALT CLC TBR WRA
4825	• KERI RUSSELL ALT CLC ECN OLG RNG TER VIS WRA	7374	• ADAM SAFRAN CLC OLG REC TBR WLD WRA
6047	- NANCY RUSSELL ALT CLC ECN OLG RNG TER VIS WRA	9671	• CASSANDRA SAGAN ALT CLC TER WRA
10015	- RODNEY RUSSELL CLC GEN HRE TER	8618	• PETER M SAGER ALT CLC HRB RNG WRA
3500	- G RUSSEN CLCTER	9397	• VICKY SAGEST ALT CLC TER WRA
9430	- PETER RUSSO ALT CLC ECN OLG RNG TER VIS WRA	9010	• GREGORY SAGNETUTN ALT CLC HRE OLG REC RNG TER WLD WRA
8224	- BOB RUSUCCI ALT CLC HRB OLG TER WLD WRA	9119	• BARBARA SAHM ALT CLC HRE OLG REC RNG TBR WLD WRA
7222	- LORA JANE RUTH ALT CLC HRB OLG REC RNG TER WLD WRA	5967	• SHELLEY SAHRTOO ALT CLC HRB OLG REC RNG TER WLD WRA
4146	- AS. RUTHERFORD ALT CLC HRB OLG REC RNG TER WLD WRA	8625	• JANE SAILOR ALT CLC HRE WRA
3315	- DWANNE RUTHERFORD CLC	5295	• BEATRICE SAK ALT CLC ECN OLG RNG TBR VIS WRA
42	- MR. & MRS, MARK RUTKOWSKI CLC	7130	• STEPHEN SAK ALT CLC ECN OLG RNG TER VIS WRA
7623	- N RUTLEDGE-SCHMIDT ALT CLC TER WRA	7132	• NAMA O SAKAKI ALT CLC HRB OLG REC RNG TER WLD WRA
8506	- DANIEL RYAN ALT CLC TER WRA	2249	• ALAN SAKAKIHARA CLC
1765	- JAMES A RYAN GEN TER	8700	• MRS C.K. SAKAMOTO TER WRA
6890	- JOHN O RYAN CLC ECN TBR	5230	• PAUL SAKEY ALT CLC HRE OLG REC RNG TER WLD WRA
8748	- MARC W RYAN ALT GEN TBR	9957	• BRADLEY K. SAKON CLC GEN HRB TER
10298	- MATTHEW J. RYAN ALT CLC ECN TBR WRA	8416	• CECI & STAN SALAMON CLC HRB OLG REC TER VIS WLD WRA
3370	- PETER & GINNIE RYAN ALT CLC HRE OLG TER WLD WRA	9244	• MR & MRS ANTHONY SALAS CLC H2O HRB REC TER VIS
9371	- ROBERT P. RYAN ALT ECN FSH REC TRL	10194	• MARGARITA SALCIDO CLC
7700	- ROGER RYAN ALT CLC HRE OLG REC RNG TER WLD WRA	4544	• MICHAEL SALEMI & PAULA SIEGEL CLC HRB TBR
5542	• SCOTT RYAN ALT CLC TER WRA	6496	• ELKA V. SALGADO ALT CLC ECN OLG RNG TER VIS WRA
7729	• SHARON E RYAN ALT CLC ECN OLG RNG TER VIS WRA	5284	• SARAH SALISBURY ALT CLC HRE OLG REC RNG TBR WLD WRA
10990	- ANTOINETTE L RYAN ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	4769	• EARL SALLEC CLC GEN OLG TER WRA
3644	- JANE RYBERG CLC	4767	• HELEN SALLEC CLC ECN OLG TER WRA
10011	- VANESA RYDEEZ CLC GEN HRB TER	6628	• BEVERLY ANN SALMOND ALT CLC HRE OLG RDS TER
6144	- DAVID RYDER ALT CLC TER WRA	12094	• BEVERLY ANN SALMOND ALT CLC HRB OLG TER WLD WRA
3616	- REV MICHAEL & DEBORAH RYDMAN RDS REC TBR WRA	3530	• JEAN SALO CLC
701	- JOHN RYLANCE ALT ECN TER	3412	• OTTO SALO CLC
740	- PATSY RYLANCE GENTBR	618	• NORBERT M SALS MAN TER
9285	- DAVID RYLAND CLC TER	7557	• DORIS SALTER ALT CLC ECN OLG RNG TBR VIS WRA
3150	- BETH RYOEMS CLC HRB	10122	• DORIS SALTER ALT CLC ECN OLG RNG TER VIS WRA
9914	- FRANK RYSTAD CLC GEN HRB TBR	9644	• KELLY L SALTER ALT CLC TBR WRA
2134	- JACKS CLC	2562	• MIRIAM SALZER CLC ECN HRB TER WLD
9282	- S M U D BRIAN JOBSON LND	459	• BOBBIE DEVIQUE SALZER-RAE CLC ECN HRE RNG TBR WRA
7582	- RIKI SAEELUCO ALT CLC ECN OLG RNG TER VIS WRA		
11365	- ART & HELGA SABLE CLC		
2407	- KARIN SABLE ALT CLC HRE OLG RDS TBR WLD WRA		

2958	MRS HERB SAMPERT TER	9980	- DAD R SANPIN ALT CLC TBR WRA
787	MATTHEW T SAMSKY ALT ECN	4954	- JUDITH SANSUM ALT CLC HRB OLG TBR WLD WRA
776	MURIEL SAMSKY ECN TER		
84	KARRI R SAMSON CLC DRT ECN HRE	246	- SANTA CRUZ CO BOARD SUPERVISORS GARY PATTON, SUPERVISOR CLC HRB REC RNG TER WRA
	OLG RDS REC RNG TBR VIS WLD		
7022	ADRIENNE SAMUELS ALT CLC TER WRA	8995	- SANTA FE PACIFIC REALTY W D CRAIG LND
4766	GEORGE J SAMUELS CLC OLG TER WRA		
4976	YOLANDA SAMUELS CLC	11206	- SANTA FE PACIFIC TIMBER CO ROBERT ALNGRAM CLC OWL TER
20020	J ROGER SAMUELSON RNA WRA		
9509	- SAN ↓ RIDGE TAXPAYERS ASSN TONY MOCIUM CLC ECN HRB REC RNA TBR VIS WRA	1162	- SANTA FE PACIFIC TIMBER CO CHARLES H EDWARDS III ALT FLE HRBTBR
		489	- SANTA FE PACIFIC TIMBER CO J E NILE CLC LND
11298	- SAN MOCIUM CLC ECN HRE TER	862	- SANTA FE PACIFIC TIMBER CO J E NILE LND
10663	- IRENE SANCHEZ AI CLC HRE OLG REC RNG TBR WLD WRA	1059	- SUE SANTANNA CLC TER WLD WRA
9283	- J. & ANNIE SANCHEZ CLC	6850	- SUE SANTANNA CLC HRE RDS TBR
579	- M C SANCHEZ TBR	5878	- CONNIE SANTAS ALT CLC HRB OLG REC RNG TBR WLD WRA
7069	- RON SANCHEZ ALT CLC HRB OLG REC RNG TBR WLD WRA		
1281	- ZACH SAND CLC HRE TBR	3381	- RUTH SANTER CLC OLG TBR VIS
5219	- ZACK SAND ALT CLC HRB OLG REC RNG TBR WLD WRA	1347	- PATRICIA SANTANEZ CLC FLE GEN HRB
		3902	- RICHARD SANTLETT ALT CLC HRB OLG TBR WLD WRA
3715	- BIRDSONG SANDER CLC ECN HRE TBR	1836	- DAN SANTOS GEN OWLTER
11602	- BIRDSONG SANDER CLC GEN HRE TER	9196	- DAN SANYSIDRO ALT CLC ECN OLG RNG TER VIS WRA
8181	- GREG SANDER ALT CLC HRB OLG REC RNG TBR WLD WRA	9197	- N F SANYSIDRO ALT CLC ECN OLG RNG TBR VIS WRA
8250	- RICK J SANDER ALT CLC ECN OLG RNG TBR VIS WRA	692	- SARDINE LAKE RESORT CHANDLER & DOROTHY HUNT' ECN TBR TRL
3298	- S SANDER ALT CLC TBR WRA	9800	- AMANDA SARGENT. ALT CLC OLG TER WRA
9382	- LISE SANDERGAARD ALT CLC TER WRA	1290	- BARBARA SARGENT. CLC RNG TER WRA
5549	- BRETT SANDERS ALT CLC TBR WRA	625	- ROBERT R SARGENT TER
3054	- C L SANDERS ECN	406	- JOHN E SARNA CLC TER
3067	- C L SANDERS FLE TBR	4972	- KAZUE SARUWATARI ALT CLC HRB OLG TBR WLD WRA
4868	- CURTIS SANDERS. ALT CLC HRB OLG REC RNG TBR WLD WRA	1839	- CHARLES SASS ALT CLC HRB OLG REC TBR WLD WRA
10008	- CURTIS SANDERS CLC GEN HRE TER	1820	- VIRGINIA SASS ALT CLC HRB OLG TBR WLD WRA
7167	- DOUG SANDERS ALT CLC TBR WRA	5667	- LILLIAN SASSENBERG ALT CLC HRE OLG REC RNG TER WLD WRA
2005	- GINA SANDERS ALT ECN GEN	10460	- PAUL SASSEN RATH ALT CLC TER WRA
4793	- JEFF SANDERS ALT CLC HRB OLG REC RNG TER WLD WRA	1347	- TAIKO SASSER CLC FLE GEN HRE
4861	- JEFF SANDERS ALT CLC HRB OLG REC RNG TBR WLD WRA	6694	- GERALD SATTERFIELD ALT CLC ECN OLG RNG TBR VIS WRA
11737	- MRS C.L SANDERS TER WLD WRA	3856	- WILLIAM & GENEVIEVE SATTLER ALT CLC HRE OLG TBR
8801	- STEVE SANDERS CLC	9418	- ROBERT SAUDER ALT CLC ECN OLG RNG TBR VIS WRA
6160	- CAROLYN SANDIE CLC GEN H2O	20500	- JEAN SAUDERRAN TRL
992	- SUSAN A SANDIFUR' TBR	716	- ARNOLD J SAUER OLG OWL TBR
7872	- STEPHANIE SANDIN ALT CLC HRB OLG REC RNG TBR WLD WRA	7876	- ARTHUR SAUER ALT CLC HRE OLG REC RNG TER WLD WRA
10482	- HOPE SANDLER ALT CLC TER WRA	6822	- BRUCE & NICKI SAUER CLC
8887	- JOE SANDOEN CLC H2O HRB REC TBR VIS	11130	- KENNETH W SAUER GEN
8633	- FISK SANDOS HST RNG TBR TRL WIN WRA	7941	- LEONARD M SAUER ALT CLC ECN OLG RDS RNG TBR VIS WRA
8626	- JAMESA SANDOS HST	735	- VERA L SAUER TBR
4081	- AARON SANFIELD ALT CLC HRE OLG REC RNG TBR WLD WRA	517	- KEITH SAUERS REC TER
9048	- AARON SANFIELD ALT CLC HRE OLG REC RNG TBR WLD WRA	10379	- DAVID SAUL CLC HRE RDS RNG VIS WSR
9795	- AARON SANFIELD ALT CLC TER WRA	5250	- GENIE SAUM ALT CLC HRE OLG REC RNG TBR WLD WRA
4030	- STEVE SANFIELD CLC HRB REC TBR		
5613	- STEVE SANFIELD ALT CLC HRE OLG REC RNG TBR WLD WRA	6117	- JACK SAUNDERS ALT CLC TBR WRA
11537	- JENNIFER RAY SANGER CLC	10088	- ALAN SAVAGE ALT CLC ECN OLG RNG TBR VIS WRA
9551	- JIMMY SANGER CLC		
3500	- RICHARD I SANGER CLC TBR		
2340	- HELEN & ALBERT SANGEY CLC ECN TBR		
7111	- STEPHANIE SANISON ALT CLC ECN OLG RNG TBR VIS WRA		

4863	- PETER SAVER. ALT CLC HRB OLG TBR WLD WRA	8002	- CARL B SCHALBERG FLE HRB REC WIN WRA
7761	- MARK SAVINO. CLC HRB TBR	10693	- KEITH J SCHALLER ALT CLC ECN OLG RNG TBR VIS WRA
969	- MICHAEL T. SAVINO CLC GEN H2O HRB REC	4984	- KAREN SCHAMBACH. CLC ECNTBR WLD WRA
6922	- THOMAS R SAVIO ALT CLC TBR WRA	11944	- LYNN SCHARDT CLC H2O HRB TBR VIS WLD WRA
8054	- YVONNE SAVIO ALT CLC TBR WRA	2321	- LYNN M SCHARDT CLC GEN HRB WLD
6580	- ANDREW H SAWYER ECN FSH RDS REC TRL	7548	- T. SCHARFER. CLC FLE H2O REC TBR TRL WLD
6842	- CHARLES SAWYER. CLC TBR	7153	- MARLA L SCHAY ALT CLC TBR WRA
10449	- JEAN C SAWYER CLC H2O HRB REC TBR VIS	9232	- DARIEN SCHAYER CLC REC TBR
1306	- JOHN B SAWYER. TBR	6158	- MICHAEL P. SCHEELE. ALT CLC HRB OLG REC RNG TBR WLD WRA
4152	- MR & MRS SAWYER DRT ECN REC TBR WRA	4551	- ALICE SCHEFFEL CLC HRB REC TBR WLD WRA
4184	- MR & MRS. SAWYER DRT ECN REC WLD WRA	11656	- ALICE D. SCHEFFEL ALT CLC HRB TBR
6650	- BARBARA SAXE ALT CLC GEN HRB OLG REC RNG TBR WLD WRA	7341	- RICHARD SCHEIFFER ALT CLC TBR WRA
9009	- SCOW SAXE. ALT CLC HRB OLG REC RNG TBR WLD WRA	7115	- WILLIAM SCHELL. ALT CLC ECN OLG RNG TBR VIS WRA
5452	- GEORGIA SAXON ALT CLC ECN OLG RNG TBR VIS WRA	4849	- SCOH SCHELLEY ALT CLC HRB OLG REC RNG TBR WLD WRA
5806	- JAMES SAYES. JR.. ALT CLC ECN OLG RNG TBR VIS WRA	5941	- DENICE SCHEUING. CLC
10957	- STEPHEN SAYRE ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	2852	- MR & MRS. A C SCHEMPP. CLC
4688	- MARGARET SAYUS ALT CLC TBR WRA	8861	- A V & MARION SCHENCK CLC H2O HRB REC TBR VIS
9725	- DONNA SCALETTE ALT CLC HRB OLG REC RNG TBR WLD WRA	6097	- DIANE A. SCHENK. CLC HRB
6544	- DAN SCANLAN ALT CLC ECN OLG RNG TBR VIS WRA	6866	- TERRY SCHETINI, PHD. ALT ECNTBR VIS WLD
5776	- NANCY E SCANLAN ALT CLC HRB OLG REC RNG TBR WLD WRA	8440	- JOHN SCHNOLA, JR.. CLC
3451	- NANCY E SCANLAN ALT CLC H2O HRB OLG REC TBR WLD WRA	2053	- PAUL SCHIAVO. CLC
11013	- CHRIS SCARDINO ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	7768	- GALE SCHICK. ALT CLC HRB OLG REC RNG TBR WLD WRA
6235	- ROBERT SCARLETT. ALT CLC ECN OLG RNG TBR VIS WRA	3439	- MIKE SCHIDEL. CLC HRB RNG TBR WRA
1272	- GEORGE M. SCARMON, M D TBR	11413	- JOE SCHIES. CLC HRB RDS REC
7937	- CATHERINE SCARPA ALT CLC ECN OLG RNG TBR VIS WRA	3838	- JOYCE SCHIES CLC HRB
1541	- BILL SCATCHARD. CLC TBR	10096	- ROBERT SCHIESLER. ALT CLC ECN OLG RNG TBR VIS WRA
5048	- BILL SCATCHARD ALT CLC HRB OLG REC RNG TBR WLD WRA	9802	- ANNA SCHILDGER CLC OLG REC TBR TRL WRA
9292	- SCE C SHOIELINI PRESERVATION FRED EISSLER ALT CLC DRT ECN FSH H2O HRB OLG OWL RDS REC RNG TBR TRL VIS WLD WRA WS	2237	- DIANA MAY SCHILKE CLC ECN GEN HRB TBR VIS
3490	- JAMES A. SCHAAI CLC ECN FLE HRB TBR WRA	7194	- REUBEN SCHILLING, ALT CLC TBR WRA
1564	- BARBARA SCHACKER CLC HRB TBR	3767	- ROBIN CARLE SCHINDEL CLC TBR
1585	- H AEL SCHACKER. CLC H2C HRB TBR	2952	- ALLISON SCHMIDT OWL WLD
1725	- H AEL D SCHACKEF CLC E HRB TBR VIS WRA	2618	- ARNOLD SCHMIDT GEN TBR
6983	- LIESE SCHADT ALT CLC HRB OLG REC RNG TBR WLD WRA	4625	- CHARLES G SCHMIDT CLC ECN HRB REC TBR VIS WRA
360	- LIEN SCIA CLC	11580	- CHARLES G SCHMIDT TRL
6521	- JO IN SCH, EI ER ALT CLC HRB OLG REC RNG TBR WLD WRA	7765	- CHRIS SCHMIDT: ALT CLC GEN HRB OLG TBR WLD WRA
6249	- RC H C I EF R C	7665	- DEBORAH SCHMIDT ALT CLC TBR TRL WIN WRA
7043	- STEVE SCHAENG AL CLC TBR WRA	1167	- KARL SCHMIDT ALT CLC HRB REC RNG TBR TRL VIS WRA
4951	- JEFFERY SCHAFFER CLC ECN REC F TBR WLD	6135	- LINDA L SCHMIDT ALT CLC ECN OLG RNG TBR VIS WRA
2592	- PAULA SCHAFFER CLCTBR	9863	- MARY DEE SCHMIDT ALT CLC HRB OLG TBR WLD WRA
2589	- OTTO SCHAIBLE ALT CLC HRB OLG TBR WLD WRA	6963	- THOMAS SCHMIDT. ALT CLC HRB OLG REC RNG TBR WLD WRA
		10181	- MARKSCHMITCKE CLCTBR
		11017	- CATHERINE W SCHMZUCH ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
		4307	- BETTY SCHNAAR ALT H2O LND RDS REC RNG TBR WLD

10405	- G SCHNEEDER ALT CLC GEN TER WRA	4416	- JOHN SCHWIND CLC H2O OLG REC TBR
5729	- CURT SCHNEIDENT CLC WRA		TRL VIS WLD
546	- DR DAVID L SCHNEIDER AIR WLD WRA	9861	- JON K. SCHWIND ALT CLC HRE OLG TBR
3176	- JEFFREY SCHNEIDER CLC HRB RDS REC		WLD WRA
	TBR	9859	- MARY L SCHWIND ALT CLC GEN HRE
7613	- SANDRA S SCHNEIDER ALT CLC TER		OLG TBR WLD WRA
	WRA	800	- JAN SCIACCA TER
7276	- WALTER SCHNEIDER. ALT CLC TBR WRA	11244	- JAN SCIACCA. ALT ECN TBR
5301	- VALERIE SCHOCH ALT CLC HRB OLG REC	6846	- MARTIN SCIALAMPO ALT CLC ECN OLG
	RNG TER WLD WRA		PLN RNG TER VIS WRA
5629	- BARBARA SCHOEKA ALT CLC HRB OLG	9346	- SHIRLEY SCLULDMAN' CLC HRB
	REC RNG TER WLD WRA	9927	- NICKI SCOFIELD CLC GEN HRB TER
8885	- NANCEE SCHOENER ALT CLC HRB OLG	5022	- ROBERT SCOFIELD ALT TBR
	TER WLD WRA	957	- SHARON SCOFIELD ECN GEN TBR VIS
8551	- ETHEL SCHOENFIELD. CLC OLG TER WRA	9333	- VIOLETTA SCORDINCE CLC OLG TBR
1475	- JAMES M SCHOER TER		WRA
2891	- JAMES O SCHOFIELD ALT GEN WLD WRA	8156	- PAUL SCORPIANS ALT CLC HRB OLG REC
10300	- MILES A SCHOFIELD ALT CLC ECN OLG		RNG TER WLD WRA
	RNG TBR VIS WRA	6072	- JAMES SCOTHORN CLC HRB RDS TER
4752	- LINDA SCHOLZ. CLC TER	5696	- SCOTT'ALTCLCHREOLGRECRNGTBR
2687	- AMY SCHOOLING' ALT CLC OLG		WLD WRA
1619	- STEVE SCHORADT. ECN TBR	10533	- ANDY SCOTT CLC GEN HRB TER
188	- DON SCHRADER CLC HRB RDS	10673	- CELESTINE SCOTT ALT CLC HRE OLG
8566	- PHOEBE SCHRAER. CLC GEN OLG TER		REC RNG TER WLD WRA
	WRA	6955	- DARCY E S C O T ALT CLC HRE OLG REC
2297	- MARIANNE SCHREEDER. CLC TER		RNG TER WLD WRA
3487	- CARLTON SCHREINER. ALT CLC HRE RDS	5831	- DON SCOTT ALT CLC HRE OLG REC RNG
	TER		TBR WLD WRA
2450	- JIM SCHROEDER' CLC	1914	- GLORIA SCOTT' ALT ECN GEN
242	- JOHN SCHROEDER. CLC TER WRA	6165	- GORDON V SCOTT ALT CLC ECN HRB
10645	- MARK & CINDY SCHROEDER CLC H2O		RDS TBR
	HRB REC TER VIS	2570	- JEAN SCOTT ALT CLC GEN REC TBR VIS
418	- TERRY & LINDA SCHROEDER. ALT CLC	5745	- JOHN & MONIQUE SCOTT' GEN REC RNG
	ECN HRB RNG TER WRA		TBR VIS
4294	- BOB SCHROER' REC WRA	8853	- JOHN E SCOTT ALT CLC HRE OLG TBR
4084	- KAY SCHROER. REC VIS		TRL WLD WRA
1144	- SUSANNAH SCHROLL ECN REC	7604	- LETITIA L. SCOTT. ALT CLC TBR WRA
8370	- LOUIS L SCHUBERT ALT CLC HRE OLG	7368	- LILIAN SCOTT CLC OLG TER WRA
	TBR TRL WLD WRA	547	- M U SCOTT GEN
9056	- SCOTT SCHUBERT' ALT CLC HRB OLG	1143	- MATT SCOTT CLC
	REC RNG TER WLD WRA	1436	- MR & MRS ROEB SCOTT GEN TBR
3428	- DALE SCHUCK ALT CLC HRB OLG REC	3794	- MRS K. SCOTT ALT CLC HRE OLG REC
	RNG TBR WLD WRA		TER WLD WRA
1736	- RUSTY SCHUETZ' CLC ECN HRB TER VIS	6952	- RICK SCOTT. ALT CLC HRE OLG REC RNG
	WRA		TER WLD WRA
4727	- ALEXANDER SCHUGREN CLC	5829	- SALLY SCOTT ALT CLC HRB OLG REC
4664	- STEVEN SCHUHART ALT CLC TBR WRA		RNG TER WLD WRA
354	- C SCHULTZ TBR	9727	- SANDRA SCOTT. ALT CLC HRB OLG REC
6193	- ERIC SCHULTZ ALT CLC HRE OLG REC		RNG TER WLD WRA
	RNG TER WLD WRA	5785	- SHIRLEY SCOTT. ALT CLC HRE OLG REC
1347	- MICHELE SCHULTZ CLC FLE GEN HRE		RNG TBR WLD WRA
6032	- WENDY SCHUMACHER' ALT CLC ECN	4156	- JUDY SCOTT & JOHN SHEIBLEY ALT CLC
	OLG RNG TBR VIS WRA		ECN TER WLD WRA
4510	- PETER SCHURCH ALT CLC HRB TER	10949	- SALLY S C O T CLC HRE RDS TER
395	- DOUGLAS SCHURLEK CLC WSR	1922	- JOHN P SCOTT, JR ALT ECN GEN
11837	- DOUGLAS SCHURLEK CLC TBR	1931	- JOHN P SCOTT, SR .ALT ECN GEN
2059	- SCHUTTE LUMBER CO CLAYTON W.	6961	- FERN SCOVILL ALT CLC HRE OLG REC
	EGNER ECN GEN TER		RNG TBR WLD WRA
635	- PETER A SCHWABE CLC REC TER	4178	- BARBARA SCRAMSTAD ALT CLC HRB OLG
1094	- CAROLE SCHWARTZ. ALT CLC ECN RNG		TBR WLD WRA
	WRA	3879	- CINDY SCRIPPS ALT CLC GEN LND RNG
1608	- MICHAEL SCHWARTZ CLC HRE		TER WRA
5276	- MARY SCHWARZ ALT CLC HRB OLG REC	5502	- TRUDY SCROFANI ALT CLC TER WRA
	RNG TBR WLD WRA	2729	- JEFFREY S. SCROGGS REC TER WRA
2074	- DIS SCHWARZE CLC HRB RDS RNG T	2246	- HELEN SCULL CLC
155	- JI SCHWARZ CLC ECN RNG WRA	9817	- JOHN SCULMAN ALT CLC OLG TER WRA
4520	- ARI S WARZER CLC		WSR
3180	- W NEF RDS REC TBR	2751	- RAY SCZAWINSKI ALT CLC HRB OLG REC
	WLD		RNG TER WLD WRA

11995	- RAY SCZAWINSKI. CLC OLG	4121	▪ BRUCE SEMON, MD CLC HRB OLG RDS
1616	- RONA SEABROOK CLC ECN TER VIS		TBR
11148	- RONA SEABROOK ECN	11343	▪ CONSTANCE SEMOTT REC
10332	- TANYA SEABROOK ALT CLC ECN OLG	6019	- ANNETTE SENDEJO ALT CLC ECN OLG
	RNG TBR VIS WRA		RNG TBR VIS WRA
8011	- EVELYN SEALINETTI. ALT CLC ECN OLG	1346	▪ EUNOR SENG CLC GEN HRB TBR WRA
	REC RNG TBR VIS WRA	8920	- GLENN SEOVENICO ALT CLC HRB OLG
3117	- LOW L SEALY ALT ECN GEN		REC RNG TBR WLD WRA
6180	- BARBARA SEAN. ALT CLC ECN HRE OLG	9123	- JURATE SEPUTA ALT CLC HRE OLG REC
	REC RNG TBR WLD WRA		RNG TBR WLD WRA
6240	• H SEARBY ALT CLC ECN OLG RNG TBR	4424	▪ RAY SEPY ECN FSH OWL REC
	VIS WRA	2066	- SEQUOIA SAW & SUPPLY CO GARY
3182	- KRISTINA SEARGEANT ALT CLC HRB OLG		SCHURE ECN TBR VIS WRA
	REC RNG TBR WLD WRA	8473	• DENNIS SERDAES ALT CLC ECN TBR
5589	- MIKE SEARGENT. ALT CLC HRE OLG REC	3811	• MARCIA SERENA ALT CLC HRE OLG TBR
	RNG TBR WLD WRA		WLD WRA
10129	- STEVEN M SEARS ALT CLC ECN OLG	7969	• DAVID R SERENI ALT CLC TBR WRA
	RNG TBR VIS WRA	7532	• TIMOTHY SERIO ALT CLC HRB OLG REC
6301	- CATHERINE M. SEATENA CLC ECN FAC		RNG TBR WLD WRA
	HRB MIN PLN RNG TER VIS	11186	• ALLUNN W SEROOK CLC OLG TER WRA
266	- HUGH SEBASTIAN WLD	1076	• JOHN & PHYLLIS SERPA. CLC FLE TER
6429	- PHILIP SEBASTIAN ALT CLC ECN OLG	7350	- LETITIA SERRA ALT CLC TBR WRA
	RNG TBR VIS WRA	4362	- ALAN SERRIE ALT CLC HRB OLG REC
8646	• RON SECHER ECN REC TBR		RNG TBR WLD WRA
5630	- ANDREA SECHRIST. ALT CLC HRB OLG	4050	- GEORGE SESSIONS ALT CLC
	REC RNG TER WLD WRA	6855	- O. SETIRRUATIN ALT CLC H20 REC TER
8584	• CARL SECHRIST. ALT CLC HRB OLG REC		WLD
	RNG TBR WLD WRA	20007	▪ PETER SETO ECN H20 LND OLG RNG
2235	- R.T SEEBURGER. GEN TER		TER WRA
7337	▪ JEFF R SEED ALT CLC TBR WRA	2699	• SETZER FOREST PRODUCTS D MARK
7540	- ARTHIE SEEHER. ALT CLC HRE OLG REC		KAELE ECNTER
	RNG TBR WLD WRA	4364	- DOUG & SHELLY SEUSS. ALT CLC GEN
11967	- CHUCK SEELEY WIN		HRB OLG TER WLD WRA
10697	- MARION SEELEY. CLC H20 HRB REC TBR	11421	▪ M SEUSS & STAFF. CLC HRB
	VIS	6850	▪ JERALYN FEA SEVESEY CLC HRB RDS
2736	• RONALDB SEELY GEN		TBR
8058	- VICTORIA L SEEWALDT. ALT CLC TER	9470	• FAWN SWARD ALT CLC HRB OLG TBR
	WRA		WLD WRA
6223	- VITA SEGALLA. ALT CLC HRB OLG REC	4174	- MARIA SWELL' CLC HRB
	RNG TBR WLD WRA	9351	- KRISTINE SEX' ALT CLC HRB OLG REC
1842	- VETA SEGALLE ALT CLC HRB TBR		RNG TBR WLD WRA
11232	- AMOS SEGHEZZI WRA	7636	• MARIBETH SEXTON ALT CLC TBR WRA
10044	- MICHELLE SEGNEZZI CLC GEN HRE TBR	10348	• PHILLIP E. SEXTON. CLC FSH H20 REC
8857	- MULVINA SEHAN CLC H20 HRB REC TBR		SIA TBR WRA
	VIS	7948	- GUYT SEYMOUR ALT CLC ECN OLG RNG
10970	- CHRISTINE SEID ALT CLC ECN FSH H20		TBR VIS WRA
	HRB SNP TBR TRL WLD WRA	W67	▪ KATHY SHADBURN-BUTLER ALT CLC HRB
9972	▪ MICHELLE SEIN. CLC GEN HRE TER		OLG TBR WLD WRA
2449	- LEN R SEITSINGER. FSH TBR WRA	11273	- JOHNS SHADEURNE GEN
a529	• JEN SELAK. ALT CLC ECN OLG RNG TER	7910	• ERIC PAUL SHAFFER ALT CLC HRE OLG
	VIS WRA		TBR WLD WRA
e855	- JEFFREY C SELE ALT CLC H20 REC TBR	9105	• HARVEST SUN SHAIN ALT CLC ECN OLG
	WLD		RNG TBR VIS WRA
10490	- DAWN SELENE. ALT CLC TBR WRA	9107	- RICHARD SHAIN ALT CLC ECN OLG RNG
1643	- CAROL J. SELF. CLC HRE		TER VIS WRA
11547	- CAROL J SELF. CLC HRE	7568	• MARILYN A SHAK ALT CLC ECN OLG
11978	- CAROL J SELF CLC HRE		RNG TBR VIS WRA
7598	• SUSAN SELF ALT CLC ECN OLG RNG TER	6139	- ODEL SHAKLEED ALT CLC TER WRA
	VIS WRA	7248	▪ RICHARD SHAMBO ALT CLC ECN OLG
10203	- KEVIN M SELFRIDGE. ALT CLC TBR WRA		RNG TBR VIS WRA
7796	• ROBERT W SELLECK CLC H20 HRB REC	6636	▪ PATRICK R SHANE ALT CLC HRB OLG
	TER VIS		TBR VIS WLD WRA
7905	• KRISSELLIN ALT CLC HRE OLG TBR WLD	6622	- CYBIL SHANE, CPA ALT CLC HRB OLG
	WRA		RDS TER
10773	▪ RICHARD SELLIN ALT CLC ECN H20 HRB	e877	• LYNNE SHANK ALT CLC ECN OLG RNG
	OLG RNG TBR VIS WLD WRA		TBR VIS WRA
3909	- LOUISE SELLMAN ALT CLC HRE OLG TER		
	WLD WRA		

4699	- NIKKI SHANKLAND CLC TBR	10193	• NIMSHEPHERD CLC
3158	• JACK SHANNEN CLC HRB	7094	• GAIL SHERE ALT CLC ECN GEN OLG RNG TBR VIS WRA
4930	• CHRISTINA L SHANNON ALT CLC HRB OLG REC RNG TBR WLD WRA	8742	• GAIL SHERE ALT CLC HZO HRB OLG RNA
10829	• LYNN SHANNON CLC HRB OLG RNG TBR TRL	1748	• GAIL C SHERE CLC ECN HRB OLG TBR VIS WRA
8994	• MICHAEL SHANNON CLC HRB	9017	• GAIL C SHERE ALT CLC HRB OLG REC RNG TBR WLD WRA
3277	• ARTHUR M SHAPIRO CLC ECNTBR	1747	• JOHN L SHERE CLC ECN HRB TBR VIS WRA
6745	• ELON SHAPIRO ALT CLC TBR	7301	• JOHN L SHERE ALT CLC ECN HRB OLG RNG TBR VIS WRA
1349	• NED B & MARGARET SHAPKER CLC	1245	• JOHN, GAIL & NATHAN SHERE CLC HRB OLG
11275	• GAIL SHARE CLC H20 HRB RNA TBR	4411	• LYDIA SHERIDAN CLC
8937	• GAIL SHARITZ ALT CLC HRB L3 REC RNG TBR WLD WRA	1883	• TIMOTHY SHERIDAN ALT TBR
3970	• HENSI NOFF T OLG TBR	10239	• CLAIRE F SHERMAN ALT CLC TBR WRA
11409	• STEPHEN SHARNOFF ALT CLC HRB TBR TRL WRA	6776	• VIRGINIA SHERMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
10537	• BECKY SHARP CLC GEN HRB TBR	7942	• BERNICE SHERNANTINE ALT CLC ECN OLG RNG TBR VIS WRA
7766	• VICTOREA M SHARP ALT CLC HRB OLG TBR WLD WRA	3096	• RUTH M SHERRILL ALT ECN GEN
1061	• IRENE A SHARPE CLC FSH REC TRL	8622	• EDWARD SHERROD ALT CLC ECN OLG RNG TBR VIS WRA
1998	• JUDI SHARPE ALT ECN GEN	10120	• SARAH SHIDLER ALT CLC ECN OLG RNG TBR VIS WRA
3089	• MARJORIE V SHARPE ALT ECN GEN	3765	• CINDY SHIELDS CLC HRE WRA
9018	• PHAEDRA SHARPE ALT CLC HRB OLG REC RNG TBR WLD WRA	8658	• DOUGLAS L SHIELDS CLC OLG
6897	• WILHELMINA SHARPE ALT CLC HRB OLG REC RNG TBR WLD WRA	2789	• MARIE SHIELDS CLC TBR
9728	• ROBIN SHARTNER ALT CLC HRB OLG REC RNG TBR WLD WRA	2788	• MR & MRS BRUCE SHIELDS CLC TBR
5494	• STEVE SHARTNER ALT CLC HRB OLG REC RNG TBR WLD WRA	4047	• PAT SHILLITO CLC
1347	• ISABEL SHASKAN CLC FLE GEN HRB	6310	• ROBERT SHIPMAN ALT CLC ECN OLG RNG TBR TRL VIS WRA
11509	• TOM SHASTED CLC DRT HRB	6341	• BRUCE D SHIRDAW ALT CLC ECN FLE HRB OLG RNG TBR TRL VIS WRA
11509	• JON G H SHASTID CLC DRT HRB	11663	• DONALD L SHIREMAN CLC
1889	• BR MALACHI SHAW CLC WRA	7586	• STEVE SHNELY ALT CLC ECN OLG RNG TBR VIS WRA
7039	• CARRIE ANNE SHAW ALT CLC TBR WRA	6480	• CAROLE L SHLIM ALT CLC HRB OLG TBR WLD WRA
7689	• DAWN SHAW ALT CLC REC TBR WRA	3748	• ELIZABETH SHOEMAKER ALT CLC HRB DLG TBR WLD WRA
5232	• JENNIFER SHAW ALT CLC HRB OLG REC RNG TBR WLD WRA	3544	• MARJORIE SHOES CLC TBR
3305	• YVONNE SHAW ALT	11509	• JON G H SHOOBL CLC DRT HRB
2840	• THOMAS SHAY CLC FSH HRB REC TBR VIS	9531	• SPENCER SHORT CLC HRB TBR
3016	• THOMAS SHAY CLC ECN FSH HRB TBR	9652	• DOUG SHORTHAND ALT CLC TBR WRA
5090	• STEVE SHCERTWAR ALT CLC HRB OLG REC RNG TBR WLD WRA	5633	• DAVID SHPAK ALT CLC HRB OLG REC RNG TER WLD WRA
4040	• NAIMA SHEA ECN OLG TBR WRA	5071	• A H SHPERAX ALT CLC HRB OLG REC RNG TBR WLD WRA
314	• JEANNE SHEALOR CLC	3983	• MARGARET SHROPSHIRE CLC ECN HRB OLG TBR
6400	• JIM SHEARIER ALT CLC HRB OLG REC RNG TBR WLD WRA	9073	• MARGARET J SHROPSHIRE ALT CLCTBR WRA
8721	• A SHEELBHADRA CLC OLG RDS REC RNG TBR TRL VIS	6853	• REVELLA SHUBER (TBR
3500	• DAVID E SHEEN CLCTBR	205W	• JANE SHUBERT TRI
644	• JOAN SHEETER CLC TBR TRL WRA	20500	• L A SHUBERT TRL
3210	• CLARK SHEILDS ALT CLC TBR WRA	729	• CARYW SHUKER TBR
6778	• DOUG SHEILDS ALT CLC HRB OLG REC RNG TBR WLD WRA	3168	• MILTON SHULTZ GEN TBR
3150	• ANN SHELBY CLC HRB	10198	• YOUNG SHUNN CLC RDS
10831	• EVE SHELDON CLC ECN TBR	8384	• JANET SIANO ALT CLC HRB OLG TBR WLD WRA
8819	• JEFFREY P SHELLKO ALT CLC RDS REC TBR WRA	5737	• ROCCO SICILIANO REC
3500	• KYA SHELTON CLC TBR	2436	• DANIEL E SICKERL ECN TBR
9783	• TRACI & TAMMY SHELTON ALT CLC TBR WRA	8523	• VANESSA SIDHALD CLC GEN OLG TBR WRA
7691	• LINDA SHENON ALT CLC GENTBR WRA	6854	• GLEN M SIEBERG ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
1840	• MAUREEN SHEPARD CLC OLG TBR WRA		
8182	• JILL S SHEPHERD ALT CLC HRB OLG REC RNG TBR WLD WRA		
8035	• MICHELE SHEPHERD ALT CLC ECN HST OLG RNG TBR VIS WRA		

11133	DICK SIEBRECM. CLC ECNTBR	11061	• SIERRA PACIFIC IND DANNY PIPKINS' ECN TBR
275	- CHRISTINA SIEDENBERG. ALT CLC HRB RDS	20009	- SIERRA PACIFIC POWER JACK BYRAM' FSH LND
2742	- CHRISTINA SIEDENBERG ALT CLC GEN HRB OLG TBR WLD WRA	3143	• SIERRA VALLEY ROPING CLUB CHRIS ALEXANDER. ALT TBR
7781	- OMALLEYT SIEGAL CLC OLG	4508	- CLAUS SIEVERT GEN OLG RDS TBR TRL WLD
10504	- DANIEL SIEGEL CLC	11618	• CLAUS H SIEVERT CLC RDS REC TBR
10403	- LEAH SIEGEL ALT CLC TBR WRA	8978	• MICHAEL T SIEWERT CLC OLG
470	- JOHN SIELER. LND VIS	7387	• DYLAN SIGREIN CLC OLG RECTBR TRL WRA
934	- LAURIE J SIELER LND	9120	• RICHARD SILBERG. ALT CLC HRB OLG REC RNG TBR WLD WRA
5594	- MARK SIELSKI ALT CLC HRB OLG REC RNG TBR WLD WRA	1257	- REV & MRS C SILBERSTEIN CLC RDS REC WRA
2161	- MICHAEL P. SIENER' CLC HRB	7776	• REV & MRS C A SILBERSTIEN CLC H2O HRB REC TBR VIS
11308	- SIERRA CASCADE LOGGING DORENE CURRY ECN TBR	11088	- MARGORIE SILL. RNG TBR
6607	- SIERRA CITY DELO ECN TBR	7928	• MARJORIE SILL. CLC ECN RNG TBR WRA
11129	- SIERRA CLUB SIERRA-NEVADA GROUP ERIC BECKWITT CLC ECN TBR VIS WLD WRA	6923	- STEPHANIE J SILL ALT CLC TBR WRA
609	- SIERRA CLUEDWOOD CHAPTER RON GUENTHER ALT CLC HRB OLG REC RNG TBR TRL WLD WRA	2511	• SILLER BROTHERS, INC ANDY SILLER ECN GEN TBR
1241	- SIERRA CLUESAN MATEO CHAPTER WALTER MELVILLE ALT CLC TBR	3000	- DENISE SILVA. ALT CLC HRB OLG REC RNG TBR WLD WRA
4979	- SIERRA CLUESAN FRANCISCO CHAPTER ALAN CARLTON CLC DRT ECN GEN HRB OLG RDS REC TBR WRA	1082	• DOLORES SILVA. CLC GEN LND REC TBR
4738	- SIERRA CLUB SAN FRANCISCO CHAPTER JERRY JORDAN REC WRA	9567	- MRS. ARTHUR W SILVA CLC H2O HRB REC TBR VIS
974	- SIERRA CLUB-YAHI GROUP SCOTT GEORGE. FSH RDS RNG TBR TRL	4914	• SHIRLEY SILVA ALT CLC ECN OLG RNG TBR VIS WRA
11122	- SIERRA CLUB-SIERRA NEVADA GROUP DON JACOBSON CLC ECN GEN HRB OLG RDS SIA TBR TRL WLD WRA	6809	• ERNEST SILVA, J D : CLC ECN TBR WSR
11318	- SIERRA CO BOARD SUPERVISORS W R FREDERKING' LND	2947	- JOHN SILVER CLC TBR
8711	- SIERRA CO BOARD SUPERVISORS JERRY MCCAF FREY ALT CLC FSH GEN HRB LND RDS REC RNG TBR TRL VIS WIN WLD WRA	424	• J SILVERMAN CLC HRB RNG TBR WRA
11100	- SIERRA CO CHBR/COMM CLAUDE HUBER' ECN LND REC RNG TBR WRA	10293	• DIANE SIMAN ALT CLC GEN TBR WRA
20457	- SIERRA CO FISH & GAME COMM ED HALL CLC HRB RDS RNG TBR WLD	1469	• HW. SIMART. ECN REC TBR
11342	- SIERRA CO HISTORICAL SOCIETY ANN ELDRED' HST TRL	3862	• WARREN G SIMISON ALT CLC HRB RDS TBR
3694	- SIERRA CO HISTORICAL SOCIETY CATHY OTTO TRL	315	• CHARLENE SIMMONS. ALT CLC ECN HRB RDS RNG TBR WRA
11341	- SIERRA CO MOUNTED POSSE ANN ELDRED. TRL	2445	• GARY SIMMONS ECN GEN
8092	- SIERRA CO SHERIFF POSSE JEAN MCAF-FREY' ALT CLC ECN HST OLG RNG TBR TRL VIS WRA	20500	- GREGG SIMMONS TRL
2506	- SIERRA COLLEGE FORESTRY BARTON RUND RNASIA	1128	• PAMELA A SIMMONS' TBR
1275	- SIERRA CENTER PRESERVATION BIOTIC DIVERSITY ERIC & WILLOW BECKWITT. OLG SIA	1885	• ROBERT L SIMMONS CLC GEN HRB TBR TRL WRA
1163	- SIERRA CE PRESERVATION BIOTIC DIVERSITY ERIC BECKWIT. CLC FLE OLG RDS RNA RNG SIA TBR WRA	7835	• CLAUDIA SIMON ALT CLC TBR WRA
1537	- SIERRA CENTER PRESERVATION BIOTIC DIVERSITY ERIC & WILLOW BECKWITT RNA TBR TRL WRA	5605	• BARBARA SIMONDS ALT CLC HRB OLG REC RNG TBR WLD WRA
11643	• SIERRA HERITAGE MAGAZINE JANICE FORBES CLC ECN TBR	10478	• DAVID SIMONDS. ALT CLC TBR WRA
6832	- SIERRA HERITAGE MAGAZINE JANICE FORBES CLC REC TBR	4635	• JOHN SIMONS. ALT CLC ECN FSH OLG RNG TBR VIS WRA
11299	SIERRA MOUNTAIN MILLS BOB WALKER ECN TBR	8980	• JOHN H SIMONS WRA
		6900	- DICK SIMPON CLC ECN REC TBR
		7946	- CATHY SIMPSON ALT CLC ECN OLG RNG TBR VIS WRA
		1611	• ELAINE SIMPSON. CLC HRB OLG WRA
		4884	• JACK SIMPSON ALT CLC HRB OLG REC RNG TBR WLD WRA
		401	- JACK F SIMPSON ECN GEN
		771	• JAMES & LESLIE SIMPSON ECN TBR VIS
		10685	• JANE N SIMPSON ALT CLC ECN OLG RNG TBR VIS WRA
		8031	• JENNIFER SIMPSON ALT CLC ECN OLG REC RNG TBR VIS WRA
		662	• JOHNA SIMPSON ALT CLC ECN HRB OLG TBR WRA
		6733	- JOSEPH L SIMPSON. CLC TBR
		5424	• K. DODGE SIMPSON CLC
		9712	• LYDIA SIMPSON ALT CLC ECN OLG RNG TBR VIS WRA

5422	- RICHARD SIMPSON J CLC	10406	- K.M SMART ALT CLC TBR WRA
5421	- VICTOR SIMPSON CLC	2600	- JESUS SMARTING GEN
986	- SIMPSON TIMBER CO DAVID W KANEY ALT TBR	4333	- R SMEDBERG CLC HRB OLG TBR
755	- JAMES E J V, JR TBR VIS WRA	1070	- DAVID & PAT SMELSER RECTRL WIN
2470	- DANIEL SIMS T C ECN HRB OLG REC RNG TBR WLD WRA	10413	- MARGARET SMIDELY ALT CLC REC TBR WRA
631	- RIC M SIMS CLC	6539	- EDVARDO SMIT ALT CLC ECN OLG RNG TER VIS WRA
7563	- VAL SIMS ALT CLC ECN OLG RNG TBR VIS WRA	6538	- FRANK SMIT ALT CLC ECN OLG RNG TBR VIS WRA
7637	- WALT E SIM T CLC TER WRA	3097	- ADE SMITH ALT ECN GEN
5559	- JULIE CL AI CLC HRB OLG REC RNG TBR WLD WRA	1743	- ALETA SMITH, CLC ECN HRB TBR VIS WRA
681	- MICHAEL SINCLAIR FLE HRB REC TBR	7638	- ANDREW SMITH ALT CLC TBR WRA
9006	- ALLEN SING ALT CLC HRB OLG REC RNG TBR WLD WRA	3627	- ANDY SMITH REC WIN WRA
5157	- TERRY SINGLE ALT CLC ECN OLG RNG TBR VIS WRA	5515	- ANDY SMITH ALT CLC TBR WRA
3593	- RANJIT SINHA ALT CLC HRB OLG REC RNG TBR WLD WRA	11478	- BONNIE SMITH. TBR
2800	- CONSTANCE SINNETT ALT CLC HRB OLG TBR TRL WLD WRA	4700	- BROOK SMITH. CLC
20203	- HAROLD SIPPENLY TBR	4344	- CAROL SMITH ALT CLC HRB OLG REC RNG TBR WLD WRA
7w7	- KATHLEEN A SISEMORE ALT CLC TBR WRA	5142	- CATHY SMITH: ALT CLC HRS OLG REC RNG TBR WLD WRA
2309	- SISKIYOU FOREST PRODUCTS NITA NORDECK GEN TBR	7030	- CATHY SMITH. ALT CLC TBR WRA
1771	- SISKIYOU WEST RICHARD ETCHISON. GEN TBR	4505	- CAYA SMITH ALT CLC ECN HRB OLG RNG TBR VIS WRA
6853	- RICHARD SIZER, PHD CLC TBR	2571	- CECILIA SMITH ALT CLC HRB OLG REC TBR TRL WRA
9752	- ROBIN SKOGLUND. ALT CLC TBR WRA	11935	- CECILIA SMITH CLC GEN H20 HRB OLG SNP TBR WLD WRA
4150	- ANTHONY SKOWBARD. REC WRA	4106	- CHARLES SMITH CLC DRT OLG REC TBR WRA WSR
9832	- KRISTE M SKYERDAL ALT CLC TBR WRA	5642	- CHRIS SMITH ALT CLC HRB OLG REC RNG TBR WLD WRA
3186	- CYNTHIA SLAGLE CLC ECN	11283	- CINDY SMITH CLC DRT FLE HRB RDS TBR VIS
8824	- G M SLAHERTY. ALT CLC HRB OLG REC RNG TBR WLD WRA	1789	- CINDY & STUART SMITH CLC ECN HRB LND RDS REC TBR VIS
6023	- PAUL SLAPINSKI ALT CLC ECN OLG RNG TBR VIS WRA	9332	- CLARISS SMITH CLC ECN TBR WLD
1797	- DORIS SLATER. CLC GEN	7357	- COLIN SMITH CLC OLG TBR TRL WRA
6865	- EUGENE L SLATER CLC	728	- CURT SMITH RECTBR
7759	- MONA M. SLATOR CLC DRT HRB OLG RNG WRA	11127	- DAVESMITH CLCTBR WRA
10055	- JENNY SLATTERY. ALT CLC ECN OLG RNG TBR VIS WRA	3501	- DAVID SMITH CLC TBR
577	- MICHAEL SLATTERY CLC ECN OLG TBR	10168	- DAVID SMITH WLD
4966	- NEIL SLAVIN CLC	1220	- DAVID M SMITH. TBR
10333	- SHIRLEY SLAVONIC ALT CLC ECN OLG RNG TBR VIS WRA	3799	- DEL SMITH ALT CLC HRB OLG TBR WLD WRA
4612	- TERESA SLEVIN CLC DRT ECN RDS TBR	10752	- ELDA E SMITH CLC H20 HRB REC TBR VIS
4613	- THOMAS SLEVIN. CLC DRT ECN FLE REC TBR	6800	- ELEANOR D SMITH. ALT CLC HRB OLG TBR WLD WRA
4776	- DORIS SLOAN CLC OLG TBR WRA	2923	- ELIZABETH A SMITH CLC
1866	- JIM SLOAN ECN TBR	10779	- ELLENS W SMITH ALT CLC HRB OLG REC TBR WLD WRA
11575	- JIM SLOAN ALT CLC ECN OLG RNG TBR VIS WLD WRA	7010	- EVELYN SMITH ALT CLC TBR WRA
12185	- MR & MRS E SLOAT CLC HRB	10141	- EVELYN R SMITH ALT CLC ECN OLG RNG TBR VIS WRA
3076	- TARA SLOCKFLETH. ALT CLC HRB TBR	4366	- FREDERIC SMITH ALT CLC HRB OLG REC RNG TBR WLD WRA
4917	- SUE O SLOUNE ALT CLC HRB OLG REC RNG TBR WLD WRA	3558	- FREDRIC SMITH ALT CLC ECN OLG RNG TBR VIS WRA
5456	- RAYMOND SLUPE ALT CLC ECN OLG RNG TER VIS WRA	10350	- G F. SMITH HRB OLG RDS TBR
10925	- EMMA SMACK. ALT CLC TBR WRA	3994	- GARNET SMITH REC VIS
3500	- H SMALL CLCTBR	4423	- GARY SMITH ECN TBR
1809	- SMALL BUSINESS FOREST PAUL HEYREND ALT ECN GEN TBR	7174	- GLENN SMITH ALT CLC TBR WRA
1120	- SALLY G SMALLEN. CLC ECN GEN	6190	- HARRIET M SMITH ALT CLC HRB OLG REC TBR TRL WLD WRA
1593	- DICK SMALLRIDGE ECN TBR	7904	- HEIDI HANSEN SMITH CLC HRB RDS
4676	- EDEN SMALLWOOD ALT CLC TBR WRA	5259	- IRENE SMITH ALT CLC ECN OLG RNG TBR VIS WRA
2734	- DAVID H SMART CL ECN HRB RDS TBR		

3150	• JAMES SMITH. CLC HRB	8738	• RUSSELLA SMITH CLC TBR
6231	- JAMES SMITH. ALT CLC HRB OLG REC RNG TBR WLD WRA	2730	- RUSSELL W SMITH ALT RNG TBR
160	• JAMESH SMITH CLC	2708	• RUTH SMITH CLC OLG TBR WRA
10641	- JAMES R. SMITH CLC H2O HRB REC TBR VIS	6237	• RUTH SMITH ALT CLC ECN OLG RNG TBR VIS WRA
7813	• JANET SMITH. ALT CLC TBR WRA	11939	- RUTH SMITH VIS WLD
7210	- JANISE SMITH ALT CLC HRB OLG REC RNG TBR WLD WRA	8029	• SANDRA K. SMITH ALT CLC ECN OLG RNG TBR VIS WRA
2432	- JEFFREV S SMITH. CLC RDS TBR	9108	- SANDRA K. SMITH ALT CLC ECN OLG RNG TBR VIS WRA
10862	- JENIFER N. SMITH' ALT CLC TBR WRA	9307	• SCOTT K. SMITH CLC WRA
643	- JEREME SMITH. CLC	10038	• SHARON SMITH CLC GEN HRB TBR
1239	- JESSE T SMITH. H2O REC VIS	3688	• SHERYL SMITH CLC ECN HRB TBR VIS WRA
3334	- JIM SMITH ECN TBR	8093	• SHERYL SMITH CLC RDS
3500	- JO SMITH. CLC TBR	9769	- SHERYL SMITH CLC OLG TBR WRA
5643	- JUDY SMITH. CLC TBR	1861	- STEPHEN T SMITH. ECN
6338	• JULIANNE HERTZ SMITH ALT CLC FSH REC TBR WRA	3806	• SUE SMITH ALT CLC HRB OLG TBR WLD WRA
7815	- KARRI SMITH, ALT CLC TBR WRA	4195	- SUSAN SMITH, ALT CLC HRB OLG REC RNG TBR WLD WRA
24406	- KEN SMITH CLC HRB OLG RNG TBR	192	• SUSAN M SMITH CLC FSH H2O OLG PLN RNA RNG SNP TBR
7191	• KENT E SMITH ALT CLC TBR WRA	8600	• SUSAN M SMITH. ALT CLC HRB OLG TBR WLD WRA
2706	• KERRY SMITH CLC	3580	- THOMAS SMITH ALT CLC ECN HRB OLG REC RNG TBR VIS WLD WRA
7258	- KERRY & JERI SMITH ALT CLC TBR WRA	8038	• THOMAS Y SMITH ALT CLC HRB OLG REC RNG TBR WLD WRA
3420	• KIRK SMITH ALT CLC HRB TBR	1843	• W H. SMITH TBR
1308	- LANA SMITH. TBR	1330	- WALTER H. SMITH' ALT CLC HRB RNG WRA
10383	• LANA SMITH CLC HRB	4166	- WAYNE SMITH REC
6277	- LINDA SMITH ALT CLC TBR WRA	6668	• WILLIAM SMITH ALT CLC ECN OLG RNG TBR VIS WRA
1744	- LON SMITH. CLC ECN GEN HRB TBR VIS WRA	11787	• ZANESMITH CLC
5402	- LORI J SMITH. CLC HRB	895	• REGIS R SMITH & ESTHER KROOTH ALT CLC ECN HRB REC RNG WRA
6109	• MARY SMITH. ALT CLC TBR WRA	5947	• MORT SMITH, DDS. ALT CLC HRB
9604	• MARY C. SMITH ALT CLC TBR WRA	6304	- LLOYD H. SMITH, JR , MD. ALT CLC HRB OLG TBR WLD WRA
3241	- MICHAEL SMITH. CLC FSH HRB TBR	6633	• ERICK THOMAS SMITH, M D ALT CLC GEN REC TBR WRA WSR
4002	• MICHAEL SMITH' ALT CLC ECN HRB OLG TBR WLD WRA	11384	• JEFFREV S SMITH, M D CLC TBR WRA
7692	- MICHAEL SMITH ALT CLC TBR WRA	2347	• BRIAN J. SMITH' TBR
8973	- MICHAEL R SMITH' ALT CLC HRB RDS TBR WRA	9989	- LORI E SMITHCROWN' ALT CLC TBR WRA
116	- MIKE SMITH' CLC HRB RDS	2574	• AH. & L. SMODEV TBR
8731	- MILTON & WILDA SMITH. CLC	8009	• BRIAN SMMHE ALT CLC ECN OLG RNG TBR VIS WRA
842	- MRS DEAN SMITH ECN	1227	• SHANNON SMMHE CLC REC
1238	- MRS. DEAN SMITH. GEN	976	• BRIAN SMMHE, P E CLC RNG TBR VIS WRA
5218	- MURIEL SMITH. ALT CLC HRB OLG REC RNG TBR WLD WRA	9177	• GARY SNEERINGER' ALT CLC ECN OLG RNG TBR VIS WRA
7529	- P R SMITH ALT CLC HRB OLG REC RNG TBR WLD WRA	8083	• JACK SNEFF ALT CLC TBR WRA
6964	• PAULA SMITH ALT CLC HRB OLG REC RNG TBR WLD WRA	5293	- NINA SNEGG ALT CLC ECN OLG RNG TBR VIS WRA
20500	• PHYLLIS SMITH TRL	5044	• BILL SNELL ALT CLC ECN OLG RNG TBR VIS WRA
6470	- R C. SMITH' ALT CLC ECN FSH OLG RNG TBR VIS WRA	7551	• DEBRA SNELL ALT CLC ECN OLG RNG TBR VIS WRA
2488	- R E SMITH ECN GEN H2O REC RNG TBR WLD WRA	1229	- IRENE SNELL CLC GEN H2O HRB OLG OWL REC TBR TRL VIS WLD WRA
8332	• R E SMITH ALT CLC HRB OLG REC RNG TBR WLD WRA	6546	• IRENE SNELL ALT CLC HRB OLG REC RNG TBR WLD WRA
615	- R G SMITH. CLC FLE HRB WRA	10065	• MEARL SNELL ALT CLC ECN OLG RNG TBR VIS WRA
3156	• RAY SMITH. CLC RDS		
3236	- RICHARD SMITH: REC WRA		
8702	- RICK D. SMITH. ALT CLC ECN OLG RNG TBR VIS WRA		
3819	- JOYCE SMITH CLC		
3819	• ROBERT SMITH. CLC		
11162	• ROBERT & LINDA SMITH CLC ECN REC		
11883	• ROBERT & LINDA SMITH CLC ECN FSH REC WSR		
7118	• RON SMITH ALT CLC HRB OLG REC RNG TBR WLD WRA		

10014	- TONY SNIDY CLC GEN HRB TBR	9526	- NATALIE SORENSKI CLC REC TBR
9942	- RICK SNOW CLC GEN HRB TBR	9677	- DAVID SORENSON ALT CLC TBR WRA
10553	- SUE SNOW CLC GEN HRB TBR	4755	- LANCE SORGIAT CLC
7146	- ROBSNOWDEN ALT CLC ECN OLG RNG TBR VIS WRA	6167	- TIM L SORRELLS REC TBR TRL WIN WRA
2932	- HAYDEN SNYDELL CLC	6853	- J RALPH SORRICK CLC TBR
1083	- BILL SNYDER ALT ECN GEN	6034	- RANDI SOULE ALT CLC ECN OLG RNG TBR VIS WRA
3500	- DAVID SNYDER CLC TBR	1213	- NANCY SOUPIOS CLC HRB REC
6786	- FRANK SNYDER ALT CLC HRB OLG REC RNG TBR WLD WRA	3500	- PERI SOUTHERLAND CLC TBR
6371	- JASON SNYDER ALT CLC HRB OLG REC RNG TBR WLD WRA	3500	- CHARLES SOUTHERLAND CLC TBR
6366	- JUDITH SNYDER ALT CLC HRB OLG REC RNG TBR WLD WRA	2843	- DAVID E SOUTHERN ALT CLC HRB OLG TBR WLD WRA
1309	- VIRGINIA SNYDER ALT CLC ECN HRB OLG REC TBR VIS WLD	3400	- NANCY SOUTHERN CLC TBR
1309	- ROBERT J SNYDER ALT CLC ECN HRB OLG REC TBR VIS WLD	10874	- MELANIE SOUTHWICK CLC FLE FSH TBR
1309	- KAREN SNYDER ALT CLC ECN HRB OLG REC TBR VIS WLD	764	- DON SOUTHWORTH ECN GEN TBR
3673	- RON SNYDER ALT CLC HRB OLG REC RNG TBR WLD WRA	5220	- AARON SOWD ALT CLC HRB OLG REC RNG TBR WLD WRA
8536	- SUSAN SNYDER ALT CLC HRB OLG REC RNG TBR WLD WRA	5832	- AARON SOWD ALT CLC HRB OLG REC RNG TBR WLD WRA
2564	- GARY J SO CLC FLE HRB REC TBR WRA	6411	- EDWARD SOWD ALT CLC ECN OLG RNG TBR VIS WRA
9518	- SOCIETY OF AMERICAN FORESTERS PAUL M MABEN CLC ECN GEN HRB LND OWL PLN TBR WLD	6405	- HANNAH SOWD ALT CLC ECN OLG RNG TBR VIS WRA
7097	- SODASHIN ALT CLC HRB OLG REC RNG TBR WLD WRA	10861	- HANNAH SOWD CLC FSH HRB TBR
9977	- SODOSHINO ALT CLC TBR WRA	11835	- HANNAHSOWD CLC
6588	- RICHARD SOEHREN ALT CLC OLG TBR WRA	12103	- AL & MARGARET SPADONI CLC REC
5943	- MRS JOHN SOEMNICHSEN ALT CLC GEN TBR TRL WRA	10833	- AL & MARGUERITE SPADONI CLC
10893	- DANNY SOFLIN CLC	8630	- CAROL G SPADONI CLC HRB OLG TBR TRL WRA
6045	- VERONICA SOFLIN ALT CLC ECN OLG RNG TBR VIS WRA	8999	- MIKE SPADONI CLC HRB OLG TBR TRL WLD WRA
8940	- DONSOKES ALT CLC FSH HRB OLG REC RNG TBR WLD WRA	8588	- MIKE SPAETH CLC OLG TBR WRA
473	- PHILIP SOKOLAY CLC TBR VIS	8818	- WILLIAM & SONJA SPAGNOLO ALT CLC HRB OLG TBR WLD WRA
3500	- BETTY SOLAM CLC TBR	1199	- MARGARET A SPAK ALT CLC HRB RDS RNG TRL
3500	- KERRY SOLAM CLC TBR	4498	- HOWARD SPALDING ALT H2O REC VIS
5981	- LAURA SOLANO ALT CLC HRB OLG REC RNG TBR WLD WRA	5674	- JENNIFER SPALDING ALT CLC HRB OLG REC RNG TBR WLD WRA
5519	- ARBOR SOLARIS ALT CLC TBR WRA	9894	- TIM SPALDING CLC RDS TBR VIS
6924	- LYNN SOLBERG ALT CLC TBR WRA	5031	- DAVIS SPARKS ALT CLC HRB OLG REC RNG TBR WLD WRA
5938	- STEVE SOLINSKY ALT CLC ECN OLG RNG TBR VIS WRA	8841	- FRANCES C SPARKS ALT CLC ECN OLG RNG TBR VIS WRA
1891	- BARRY SOLOMON CLC ECN HRB RNG WRA	2062	- JOE SPARKS CLC HRB TBR
11657	- CEIL & STAN SOLOMON CLC HRB OLG RDS TBR TRL WIN	531	- KENNETH R SPARKS CLC HRB REC TBR
344	- SOMMER CLC	657	- GARY SPARLEN ECN WRA
E495	- DANIEL SOMMER ALT CLC ECN OLG RNG TBR VIS WRA	6028	- CHRIS SPATZ ALT CLC ECN OLG RNG TBR VIS WRA
1102	- ROWDY SOMMER CLC TBR	11049	- KENNETH E SPEAR ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
2877	- SUSANNE SOMMER CLC	2631	- SPECIALTY FOREST PRODUCTS DALE MASSON TBR
121	- THERESE & BRIAN SOMMERS ALT CLC HRB TBR	927	- SPECKERT FOREST PRODUCTS OTTO SPECKERT TBR
231	- THERESE & BRIAN SOMMERS ALT CLC HRB TBR	2111	- LAURA SPENCE ECN TBR
9384	- EBBIE NAL SONDERGAARD ALT CLC TBR WRA	2110	- SHIRLEY SPENCE DRT FLE TBR
		6376	- BETH SPENCER ALT CLC HRB OLG REC RNG TBR WLD WRA
		2116	- BOB SPENCER GEN
		241.1	- C LEE SPENCER ECN REC TBR
		10107	- CAROLYN SPENCER ALT CLC ECN OLG RNG TBR VIS WRA
		6381	- CLINT SPENCER ALT CLC HRB OLG REC RNG TBR WLD WRA
		653	- JAY SPENCER ALT GEN
		6382	- LINDA SPENCER ALT CLC HRB OLG REC RNG TBR WLD WRA

10389	- MARY ELLEN SPENCER. CLC HRB RDS TBR VIS	9660	- M JULIA STAFER ALT CLC HRB OLG TBR WLD WRA
3348	- MARY KATE SPENCER ALT CLC TBR WRA	3690	- RAY A STAFFORD CLC
2115	- MICHAEL SPENCER, ALT ECN	2643	- EDWARD STAHL ALT CLC HRB OLG TBR WLD WRA
2412	- ROCKY E SPENCER ECN TBR		- EDWARD STAHL CLC OLG TER WRA
3986	- RON SPENCER CLC OLG TBR WRA	12233	- MARILYN STAHL ALT CLC HRB OLG TBR WLD WRA
2120	- THOMAS J SPENCER TBR	2641	- MARILYN STAHL CLC OLG TBR WRA
1723	- MARIE SPENGLER CLC ECN HRB TBR VIS WRA	2647	- SHERRY STAHLMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
11118	- MARIE SPENGLER CLC HRB TBR	5235	- BARRY STAKIN ALT CLC HRB OLG TBR WLD WRA
7514	- JANINE SPENSON ALT CLC HRB OLG REC RNG TBR WLD WRA	3218	- RICHARD F STALDER ALT CLC TBR WRA
3387	- LYNN SPERLING ALT ECN GEN	9614	- TINA STALLANE ALT CLC HRB OLG REC RNG TBR WLD WRA
4356	- JOHN SPERRY. CLC ECN	E311	- RON STAMPE. TRL
7004	- JANICE SPETH ALT CLC TBR WRA		- JUDITH STAMPE TRL
6181	- DENNIS SPETS ALT CLC HRB OLG REC RNG TBR WLD WRA	M500	- SHARON STANCLIFF ALT CLC TBR WRA
6184	- SOPHIE SPETS ALT CLC HRB OLG REC RNG TBR WLD WRA	20500	- JEAN STANDISH ALT CLC HRB OLG TBR WLD WRA
3911	- DON SPIDELL' CLC	4674	- UNITA STANFORD ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
8610	- EILEEN SPIDELL ALT CLC HRB OLG REC RNG TBR WLD WRA	3242	- STANIFORD CLC
1844	- TOM SPIEKERMAN CLC RDS	10974	- CHUCK STANLEY CLC HRB
20500	- DAVID SPIELE. TRL	1E37	- JUNE STANLEY ALT CLC HRB LND OLG REC RNG TBR WLD WRA
5590	- DANIELLE SPIER ALT CLC HRB OLG REC RNG TBR WLD WRA	3150	- LINDA STANLEY ALT CLC HRB OLG REC RNG TBR WLD WRA
2524	- ANNIE J SPIESMAN ECN REC TBR WRA	7072	- STACY STANLEY ALT CLC HRB OLG REC RNG TBR WLD WRA
5004	- JOSH SPILLINGS. CLC	5883	- STEVE STANSON ALT CLC TBR WRA
6799	- R C SPINK ALT CLC ECN OLG RNG TBR VIS WRA	4886	- ALICIA STANTON ALT CLC
10734	- KATHERINE SPINLOCK. ALT CLC TBR WRA	6140	- SHANIE STANTON ALT CLC HRB OLG REC RNG TBR WLD WRA
20500	- KEIKO SPIREK. TRL	6312	- CHRISTOPHER D STANTON, M.D. ALT CLC ECN HRE REC TBR WRA
8374	- SARA SPIRT ALT CLC ECN OLG RNG TBR VIS WRA	5117	- DANIEL STANZIONE CLC ECN TBR
7903	- SUSAN L SPIRVEY. ALT OLG TBR WRA	238	- WILL STAPLE ALT CLC ECN FSH H2O OLG OWL RDS RNG TBR TRL VIS WLD
6198	- JANET L SPITZER & LOUIS J IRWIN, MD'S. CLC DRT RDS TBR	4740	- WILL STAPLE. ALT CLC HRB OLG REC RNG TBR WLD WRA
6534	- REBECCA SPIVALE. ALT CLC ECN OLG RNG TBR VIS WRA	292	- DARRIN STAPLETON ECN TBR
8556	- VEIN SPOHN CLC ECN HRB TBR VIS WRA	5825	- TERRY STAPLETON. ECN GEN
1201	- HOLGER & VICTORIA SPOHR CLC TBR	817	- KRIS STAPP ALT CLC HRB OLG TBR WLD WRA
4348	- MARK SPOHR ALT CLC HRB OLG RDS TBR TRL WLD	816	- JERYLL STAR CLC TBR
2504	- SARAH SPOOLES ALT CLC	4851	- MARCIA STARCK ALT CLC HRB RNG TBR TRL WRA
7050	- SARAH SPOOLES ALT CLC HRB OLG REC RNG TBR WLD WRA	6853	- DIANE M STARK ALT CLC GEN HRB RNG TBR
5019	- THERESA SPRAGGINS ALT CLC H2O HRB OLG RDS REC RNG TBR VIS WLD	54	- LARRY STARK CLC H2O TBR
9947	- JOHN SPULLER CLC GEN HRB TBR	8803	- LYNDEN STARK CLC ECN HRB LND RDS TBR VIS
511	- SQUAW VALLEY, USA THOMAS H ANDER- SON REC WIN	3498	- MARY M STARK. RNG TBR WRA
7040	- DAVID SQUIRE ALT CLC TBR WRA	4537	- DANIELLE STARKEY ALT CLC TBR WRA
3001	- ADA SQUIRES, CLC ECN TBR	1307	- ERIC STARKEY ALT CLC HRB OLG REC RNG TBR WLD WRA
3926	- ADA SQUIRES CLC ECN	6911	- ERIC STARKEY CLC GEN HRB TBR
6852	- WILLIAM G SRADER' CLC TBR	5891	- JERRY & CLAUDIA STARKEY CLC TBR MARILYN STARKEY ALT CLC HRB OLG TBR WLD WRA
7003	- HARRY SRASSER ALT CLC TBR WRA	9966	- MARILYN STARKEY ALT CLC HRB
5827	- LOUIS SRENSFELDER' ALT CLC HRB OLG REC RNG TBR WLD WRA	2499	- DEMIAN STARLIGHT ALT CLC TBR WRA
7702	- LARRY SRENVICK ALT CLC ECN OLG RNG TBR VIS WRA	3636	- GEORGE STARNER ALT CLC ECN OLG RNG TBR VIS WRA
5722	- PENELOPE ST CLAIR CLC HRB OLG TBR WRA	3643	- RASTIP STAROZEN ALT CLC HRB OLG REC RNG TBR WLD WRA
3288	- PENELOPE ST CLAIRE. ALT CLC HRB OLG TBR WLD WRA	9625	
9780	- PENELOPE ST CLAIRE ALT CLC TBR WRA	7583	
10631	- ANNA E STACK CLC H2O HRB REC TBR VIS	7524	
6365	- MILTON STACKHOUSE ALT CLC HRE OLG REC RNG TBR WLD WRA		

675	- STEVEN STASER ECN GEN REC TBR	2694	- MONIQUE STEININGER ALT CLC HRB OLG REC RNG TBR WLD WRA
9653	- DONNIE STASS ALT CLC TBR WRA	10433	- ANNE STEIRLAND CLC H20 HRB REC TBR VIS
2530	- DONALD L STATHOS TBR	1375	- JOHANNA STEK ALT CLC
3500	- DOUG STAUBERGER CLC TBR	172	- DR J B STEK P E CLC RECTBR
5704	- MARTIN STAUBUS ALT CLC HRB OLG TBR WLD WRA	1613	- N WILLIAM STENQUIST GEN TBR
6274	- JULIE STAUGHTON ALT CLC TBR WRA	8656	- BAILEY STENSEER CLC H20 HRB OLG OWL TBR VIS WIN WRA
7984	- G STAWETT ALT CLC HRB OLG REC RNG TBR WLD WRA	1740	- BAILEY STENSON CLC ECN HRB TBR VIS WRA
10184	- PATTI STAYNER CLC	1741	- DENNIS STENSON CLC ECN HRB TBR VIS WRA
2084	- K.L STAYTON TBR	10426	- DENNIS STENSON CLC FSH HRB OLG RDS REC RNG TBR TRL WRA
9556	- BETTY & DICK STEELE CLC	1140	- DEBORAH L STEPHANY CLC TBR
9705	- CAROLYN STEELE ALT CLC ECN OLG RNG TBR VIS WRA	1785	- DEBORAH L STEPHANY CLC
8764	- CRAIG C STEELE ALT CLC ECN OLG RNG TBR VIS WRA	2469	- JAIMESINA STEPHENS ALT ECN GEN
8765	- DOLORES STEELE ALT CLC ECN OLG RNG TBR VIS WRA	8945	- MICHAEL STEPHENS ALT CLC HRB OLG REC RNG TBR WLD WRA
2057	- DWIGHT C STEELE CLC HRB OLG REC TBR WIN	6013	- LOWELL STEPHENSON ALT CLC ECN OLG RNG TBR VIS WRA
12235	- NANCY STEELE CLC OLG TBR WRA	5564	- NANCY STEPHENSON ALT CLC HRB OLG REC RNG TBR WLD WRA
2580	- NANCY E STEELE ALT CLC HRB OLG TBR WLD WRA	5593	- DICK STERBON ALT CLC HRB OLG REC RNG TBR WLD WRA
2581	- R H STEELE ALT CLC HRB OLG TBR WLD WRA	4374	- PAUL STERITY CLC HRB VIS WLD
12234	- R H STEELE CLC OLG TBR WRA	1308	- ANNE E STERK TBR
4739	- WILLIAM STEELE REC WRA	4969	- DAVID STERLING CLC HRB
3150	- JOHN STEFELT CLC HRB	9689	- BRUCE STERMER ALT CLC TBR WRA
3776	- RICK STEFFONS ALT CLC HRB OLG REC RNG TBR WLD WRA	2814	- MRS W E STERN RDS TBR
9185	- RICK STEIG ALT CLC ECN OLG RNG TBR VIS WRA	4301	- DAVID STERNBERG ALT CLC HRB OLG PLN VIS WLD WRA
1869	- CRAIG STEIGER TBR WRA	6528	- GEORGE E STERNNETZ ALT CLC ECN OLG RNG TBR VIS WRA
2121	- CRAIG STEIGER CLC	630	- MAE STEVENOT RNG TBR WRA
7227	- WANDA STEIGH ALT CLC HRB OLG REC RNG TBR WLD WRA	6268	- CHAD STEVENS ALT CLC TBR WRA
5545	- E STEIGRN ALT CLC TBR WRA	799	- DAVID B STEVENS GEN TBR
6728	- DOROTHY G STEIN CLC OWL RDS TRL	9666	- K STEVENS ALT CLC TBR WRA
6904	- ERIC STEIN ALT CLC TBR	1529	- LINDA STEVENS CLC ECN HRB WIN
10756	- HARRY & SIS STEIN CLC H20 HRB REC TBR VIS	7057	- PAULA STEVENS ALT CLC HRB OLG REC RNG TBR WLD WRA
5073	- JUSSEN STEIN ALT CLC HRB OLG REC RNG TBR WLD WRA	1081	- ROYCE STEVENS ECN OWL TBR WRA
6095	- KAY STEIN ALT CLC ECN OLG RNG TBR VIS WRA	11069	- ROYCE STEVENS CLC ECN GEN OLG WRA
5074	- MATTHEW STEIN ALT CLC HRB OLG REC RNG TBR WLD WRA	1153	- TOBY STEVENS GEN TBR WRA
1117	- MICHAEL J STEIN ALT	9824	- ZAHEVA STEVENS ALT CLC OLG RDS RNG TBR WRA
7652	- TIRIEN STEINBACH CLC GEN OLG TBR WRA	654	- ALVIN R STEVENSON ALT ECN GEN TBR WRA
7176	- R M STEINBACK CLC OLG TBR WRA	4760	- NELLIE STEVENSON CLC OLG TBR WRA
6182	- CAROLYN STEINBAUER ALT CLC HRB OLG REC RNG TBR WLD WRA	10074	- PAT STEVENSON ALT CLC ECN OLG RNG TBR VIS WRA
6364	- LINDA STEINBAUER ALT CLC HRB OLG REC RNG TBR WLD WRA	4782	- RAY STEVENSON CLC GEN OLG TBR WRA
6363	- RICK STEINBAUER ALT CLC HRB OLG REC RNG TBR WLD WRA	3150	- SHON STEVENSON CLC HRB
6183	- WINNIE STEINBAUER ALT CLC HRB OLG REC RNG TBR WLD WRA	3150	- ROBERT STEVENSON CLC HRB
10385	- DANIEL STEINBERG ALT CLC GEN HRB LND OLG RNG TBR TRL	3653	- R J STEVENTON CLC HRB TBR
1636	- JERRY STEINBERG GEN	9737	- INGRID STEWARD ALT CLC ECN OLG RNG TBR VIS WRA
5669	- RON STEINBERG ALT CLC HRB OLG REC RNG TBR WLD WRA	3500	- ALLEN STEWART CLC TBR
4322	- DOROTHY, TOM & JEFFREY STEINER CLC HRB TBR	3076	- COMER L STEWART ALT ECN GEN
2174	- MOIRA STEINER ALT CLC HRB OLG TBR WLD WRA	3081	- DAN STEWART ALT ECN GEN
		5037	- DEBRA STEWART ALT CLC HRB OLG REC RNG TBR WLD WRA
		8193	- FRANK STEWART ALT CLC HRB OLG REC RNG TBR WLD WRA
		11217	- FRANK STEWART FSH GEN H20 LND RDS REC RNG SIA TBR TRL VIS WLD WSR

1405	- JAMES A STEWART. CLC HRB PLN RDS RNG TBR TRL VIS	2073 5227	- WENDY STONER CLC HRB OLG TBR
3082	- JULIE STEWART. ALT ECN GEN		- STEVEN STONESIFER. ALT CLC HRB OLG REC RNG TBR WLD WRA
9347	- KIMBERLY STEWART CLC DRT H2O HRB OLG RDS RNG TBR WRA	5317	- AHNEMARIE STONSON ALT CLC HRB OLG REC RNG TBR WLD WRA
393	- STEVE a HAUNA STEWART CLC ECN HRB TBR WRA	7137	- ARTHUR STOPES' ALT CLC HRB OLG REC RNG TBR WLD WRA
1406	- TERI A STEWART CLC HRB PLN RDS RNG TBR TRL VIS	6374	- CINDY STORER ALT CLC HRB OLG REC RNG TBR WLD WRA
81W	- VAL STEWART. AIR CLC ECN FSH H2O HRB OLG REC TBR TRL VIS WLD	11173	- VIRGIL a SHIRLEY STOREY CLC FSH RDS TBR TRL VIS
3075	WILMA STEWART. GEN	8619	- MERLYN STORM REC TBR WLD WRA
3437	DANIEL STICKNEY. ALT CLC	1155	- PHILIP STORMS ECN TBR TRL VIS
10683	MARK STICKNEY. ALT CLC ECN OLG RNG TBR VIS WRA	5372	- SUSAN STORTZ ALT CLC ECN OLG RNG TBR VIS WRA
5114	CRAIG STIEDE. ALT CLC HRB OLG REC RNG TBR WLD WRA	10167 9449	- LINDA STORY CLC TBR
4126	JUNE STIEGER' ALTTBR WRA		- CHARLIE STOTZ ALT CLC ECN OLG RNG TBR VIS WRA
11790	JUNE V. STIEGER. ALT CLC TBR	4455	- GERI STOUT CLC ECN HRB OLG RDS TBR
7758	LORNA STIGALL' CLC H2O HRB OLG TBR TRL WLD WRA	10448	- MORGAN STOUT CLC H2O HRB REC TBR VIS
7680	- HARVEY STIHAUS, ALT CLC TBR WRA	8597	- JOSEPH STOVAL CLC ECN HRB TBR
7414	- JOHN STIKEN. ALT CLC HRB OLG REC RNG TBR WLD WRA	2720	- BERENICE STOVER. REC TBR
7611	- MARTHA C STILES. ALT CLC TBR WRA	2725	- JOANSTOVER CLC DRT H2O HRB REC
7973	TAKA STILES. ALT CLC HRB OLG REC RNG TBR WLD WRA	4938	- JOAN STOVER, ALT CLC ECN OLG RNG TBR VIS WRA
7655	ERIN STILL. ALT CLC GEN TBR WRA	1551	- KIM STOVER' ECN TBR
1676	- L.R. STILLSON ECN	10109	- BILL STRACHAN ALT CLC ECN OLG RNG TBR VIS WRA
11203	- REED STILLSON REC TBR		- TRACYSTRAHL CLC RDS
1w73	RAY STILLWELL. ALT CLC ECN OLG RNG TBR VIS WRA	4753 6137	- ADRIEN STRALEY. ALT CLC TBR WRA
9316	DEANNA RENE STILWELL. CLC H2O HRB REC TBR VIS	3680 11609	- VICTORIA STRASH ALT CLC HRB
5086	- RICHARD STILWELL' ALT CLC ECN OLG RNG TBR VIS WRA	2386	- VICTORIA STRASH. CLC HRB WRA
9315	- ROSIE A STILWELL. CLC H2O HRB REC TBR VIS	3768	- DENNIS STRASSBURG CLC
11854	- G. STINBERG' CLC GEN HRB	1210	- RUDY STRASSER ALT CLC
4014	- USA STINE CLC OLQ RDS TBR	9045	- HELENSTRAUG CLC HRB
4145	- MICHAEL STINE. ALT CLC TBR		- LORENZO STRAUSS, ALT CLC HRB OLG REC RNG TBR WLD WRA
10306	- MIKE STINE. ALT CLC ECN OLG RNG TBR VIS WRA	10126	- VELDEN STRAUSS. ALT CLC ECN OLG RNG TBR VIS WRA
8230	- NANCY a ROEDER STINSON ALT	8977	- LIZ STREATER' CLC HRB TBR VIS WRA
3773	- ARTHUR STOBBE. TBR WRA	377	- DANIEL STREMP ALT CLC HRB OLG RDS RNG TBR TRL WRA
7436	- SUSAN STOCKSTILL: ALT CLC HRB OLG REC RNG TBR WLD WRA	4651	- GABRIELE STREWER ALT CLC TBR WRA
4465	- MICHAEL STOCKTON' CLC ECN FSH GEN HRB TBR	9862	- ALVA STRICKER' ALT CLC HRB OLG TBR WLD WRA
8541	- GARY STODDARD: ALT CLC ECN OLG RNG TBR VIS WRA	8602	- B JUNE STRICKER ALT CLC HRB OLG TBR WLD WRA
9860	- JAMES T. STOFFER. ALT CLC HRB OLG TBR WLD WRA	8499	- DEANNA STRICKER' ALT CLC HRB OLG TBR WLD WRA
5602	- JUDY STOKES ALT CLC FLE HRB OLG REC RNG TBR WLD WRA	8604	- JOHN STRICKER' ALT CLC HRB OLG TBR WLD WRA
11108	- ALAN STOLLER' REC TBR VIS	8498	- TINA STRICKER' ALT CLC HRB OLG TBR WLD WRA
5734	- ALAN A STOLLER. DRT RDS TBR	5350	- TYESS STRICKER ALT CLC HRB OLG REC RNG TBR WLD WRA
8944	- AUDREY STOMPTEL ALT CLC HRB CLG REC RNG TBR WLD WRA	2373	- ROSE STRICKLAND ALT CLC DRT ECN H2O HRB OLG RDS RNG TBR TRL
2357	- JEFF STONE ALT CLC ECN FLE FSH GEN H2O HRB LND OLG OWL RDS REC RNG SIA TBR TRL WLD WRA	552 553	- BEAU STRIKA. CLC
9758	- JUDY STONE. ALT CLC TBR WRA	10407	- TELLY STRIKA. ALT CLC
1309	- KAREN STONE ALT CLC ECN HRB OLG REC TBR VIS WLD	808	- LINDA STRITE. ALT CLC REC TBR WRA
3790	- MARSHA STONE. ALT CLC HRB OLG REC RNG TBR WLD WRA	809 11865 4300	- HUBERT STROH. ECN OWL TBR
			- PHYLLIS STROH ECN TBR
			- BILL STROHMAIER ALT CLC
			- GEORFREY STROLLER ALT CLC ECN OLG RNG TBR VIS WRA

7673	- GREG STROM CLC OLG TER WRA	9434	- WAYNE SUMMERVILLE. ALT CLC ECN OLG
5925	- ROMAUG STROM REC WRA		RNG TER VIS WRA
7672	- MATT STROMEERG CLC GEN OLG TER	1567	- FRED, SUE, BRIAN & JIM SUMRALL GEN
	WRA	5548	- PAULINE SURERKROPP ALT CLC TER
382	- KENT STRONG CLC HRE RNG		WRA
11064	- RON STRONG GEN OLG OWL	11446	- USA SURLLINGER CLC HRB OLG TER
3436	- WINSTON & JEAN STRONG, ALT GEN H20	7823	- SUSAN S, SURREY ALT CLC TBR WRA
	TBR	2539	- JORDAN SUSMAN ALT CLC ECN HRB
10650	- SHARRON L STROOPE ALT CLC ECN		OLG TER WLD WRA
	OLG RNG TER VIS WRA	6854	- WILL SUSSER ALT CLC ECN HRE OLG
9373	- JACKIE STROUD CLC DRT ECN H20 HRE		REC RNG TBR WLD WRA
	RNG TER WLD WRA	3220	- DR LOUIS E SUSSMAN, ALT CLC HRE
8581	- KURT STROVINK ALT CLC ECN HRE TER		TER
	VIS WRA	10472	- LAURA SUTCLIFFE ALT CLC TBR WRA
999	- ARLENE STRUBEL, CLC HRE REC RNG	143	- BOB SUTER CLC ECN
	TRL VIS	9814	- KATHLEEN SUTER CLC OLG TER WRA
6315	- JANE & ERIC STRUBLE, ALT CLC TER WRA	3400	- CYNTHIA SUTFER CLC TBR
8323	- ADRIAN STRULEY ALT CLC HRB OLG REC	612	- CURT SUTLEFF CLC TER
	RNG TBR WLD WRA	9643	- ETHAN SUTTON ALT CLC TER WRA
5462	- DON STUART' ALT CLC ECN OLG RNG	964	- JAMES W SUTTON, ECN GEN
	TBR VIS WRA	11174	- MARGE SUTTON CLC HRE OLG TBR WRA
422	- RICHARD L STUART ECN TER WRA	4461	- LARRY SVALBERG PLN TBR
751	- RICHARD L STUART' ALT CLC GENTER	1232	- CARL E SWAIN, CLC RDS WRA
2833	- HELEN J STUDEBAKER HRB RDS TER	6101	- HARIDAS SWANI & DAVID FOX ALT CLC
9539	- STUDENT GEN		TBR WRA
1498	- VIOLA STULE CLC HRB OLG TER TRL	33	- JOHN SWANSON CLC ECN
	WLD WRA	868	- JOHN R SWANSON GEN H20 LND RDS
9328	- JEAN STULTZ CLC H20 HRB REC TER VIS	515	TER WLD WRA WSR
5529	SALLY STULTZ ALT CLC TBR WRA	5186	- MERVIN SWANSON, TBR
495	THERESA STUMP ALT CLC WRA		- RALPH B SWANSON, ALT CLC ECN OLG
1751	DANIEL J. STUNY CLC ECN HRB TBR VIS	7644	RNG TBR VIS WRA
	WRA	10340	- ROD SWANSON ALT CLC TER WRA
1467	GORDON STURGILL ECN		- DAVIN SWANT' ALT CLC ECN OLG RNG
2016	DOUG STURMAN ALT ECN GEN	10956	TBR VIS WRA
2018	JILL STURMAN ALT ECN GEN		- DOUGLAS C SWANTNER ALT CLC ECN
10353	MATT STUTING, ALT CLC OLG TBR VIS	602	FSH H20 HRE SNP TER TRL WLD WRA
10642	MR & MRS SUDDUTH CLC H20 HRB REC	10561	- ELLEN SWARD RDSTER WRA
	TER VIS	9524	- IAN SWARTZ CLC GEN HRB TER
5604	HOLANDA SUENE ALT CLC HRB OLG REC	10268	- BRETT SWATSENBORG CLC TER
	RNG TBR WLD WRA		- PRISCILLA L SWEAINJER ALT CLC TER
6761	KATY & BOB SUGGETT ALT CLC HRB OLG	9112	WRA
	REC RNG TER WLD WRA		- BILL SWEAT ALT CLC ECN OLG RNG TER
20507	JULIETTE W SUHR TBR	10797	VIS WRA
3339	ROXA SULL CLC OLG TER WRA	8676	- ANNE SWEET CLC OLG TBR WRA
6623	ANNA SULLIVAN CLC HRB		- BILL SWEET ALT CLC ECN OLG RNG TER
6642	ANNA SULLIVAN, CLC HRE REC TBR TRL	3740	VIS WRA
	WRA		- CAREY SWEET, ALT CLC HRB OLG TBR
9874	CHARLES SULLIVAN' ALT CLC ECN OLG	4885	WLD WRA
	RNG TBR VIS WRA		- DEBBIE SWEET ALT CLC HRE OLG REC
8537	JOHN SULLIVAN ALT CLC ECN OLG RNG	4143	RNG TER WLD WRA
	TBR VIS WRA		- ALISON SWEETSER' CLC GEN HRE OLG
9634	- MAYER SULLIVAN CLC OLG TER WRA	8703	RNG TER TRL
5582	- MIKE SULLIVAN ALT CLC HRB OLG REC	5684	- ROBERT L SWEEZY' CLC HRE WLD
	RNG TBR WLD WRA		- LISA SWEHLA ALT CLC HRE OLG REC
2903	- ROBERT SULLIVAN ALT CLC ECN HRE	5288	RNG TBR WLD WRA
	OLG TER WLD WRA		- DANIEL SWEIGERT ALT CLC HRB OLG
10 m	- SUZANNE SULLIVAN ALT CLC ECN OLG	7874	REC RNG TER WLD WRA
	RNG TBR VIS WRA		- PATRICIA SWEIGERT ALT CLC HRB OLG
259	- WILLIAM J SULLIVAN CLC RDS	1403	REC RNG TER WLD WRA
11057	- CRYSTAL M SULLIVAN ALT CLC ECN FSH	9122	- CHARLES A SWENSON ECN
	H20 HRB SNP TER TRL		- LEE SWENSON ALT CLC HRE OLG REC
10976	- ROANA SULLIVAN ALT CLC ECN FSH H20	2156	RNG TER WLD WRA
	HRB SNP TER TRL WLD WRA	35w	- DARRELL SWEZEY ECN TER
7977	- ANDY SUMMERS ALT CLC HRB OLG REC	7751	- CAROL SWIFT CLC TBR
	RNG TBR WLD WRA	611	- MIRIAM K. SWIFT TER
9431	- ELSIE SUMMERVILLE ALT CLC ECN OLG	6991	- SHELDON SWIFT, M D CLC TER
	RNG TBR VIS WRA		- D SWINEHART ALT CLC HRE OLG REC
			RNG TER WLD WRA

7037	- ARON SWINK ALT CLC TBR WRA	3208	- BYRON TAYLOR ALT CLC ECN
8986	- DENNIS M SWITCIK REC	49	- CHRIST TAYLOR ALT CLC ECN HRB TBR WRA
2337	- HOWARD J SWOLGAARD CLC	5198	- DAVID P. TAYLOR, ALT CLC HRB OLG REC RING TBR WLD WRA
2286	- RUTH & STAN SWORDER ALT CLC HRB OLG TBR WLD WRA	11388	- DAW TAYLOR H20 OLG REC TBR VIS
10484	- BARBARA SWYER ALT CLC TBR WRA	4852	- DEBBIE TAYLOR ALT CLC HRB OLG TBR WLD WRA
7974	- PA SYLVAND ALT CLC HRB OLG REC RING TBR WLD WRA	5217	- DEBBIE TAYLOR ALT CLC HRB OLG REC RING TBR WLD WRA
10311	- ANGELA M SYLVESTER ALT CLC ECN OLG RING TBR VIS WRA	2173	- DOUG TAYLOR, CLC H20 OLG REC VIS WLD
9481	- DEAN SYLVESTER ALT CLC TBR WRA	9268	- ERIKA TAYLOR CLC
6670	- GUY SYLVESTER ALT CLC ECN OLG RING TBR VIS WRA	5214	- GLENTAYLOR, ALT CLC HRB OLG REC RING TBR WLD WRA
5490	- JON SYLVIA ALT CLC ECN FSH OLG RING TBR VIS WRA	6345	- JEAN S. TAYLOR CLC FSH GEN HRB REC TBR TRL WRA
5336	- KRISTEN SYLVIA ALT CLC HRB OLG REC RING TBR WLD WRA	1299	- JEFF TAYLOR CLC ECN HRB RING TBR TRL WRA
9951	- JIM SYLVO CLC GEN HRB TBR	4277	- KATHRYN E. TAYLOR, CLC HRB RDS TBR
7944	- R & F SYVLIE ALT CLC ECN GEN OLG RING TBR VIS WRA	5206	- LARRY TAYLOR ALT CLC HRB OLG REC RING TBR WLD WRA
8587	- JOHN TABER CLC GEN OLG TBR WRA	9764	- LINDA T TAYLOR ALT CLC TBR WRA
8380	- SHARREIL TACCEALLA ALT CLC HRB OLG REC RING TBR WLD WRA	3263	- MARNA TAYLOR ALT CLC GEN HRB OLG REC TBR VIS WLD WRA
5595	- DONNA TAGGART ALT CLC ECN OLG RING TBR VIS WRA	10763	- MICHAEL TAYLOR CLC OLG TBR WRA
8208	- SUSAN TAW ALT CLC FSH OLG TBR WRA	2448	- MIKE TAYLOR ECN TBR
4103	- KIM TAKEMOTO ALT CLC HRB OLG REC RING TBR WLD WRA	9919	- PAT TAYLOR, CLC GEN HRB TBR
10102	- DANIEL TALAMANTES ALT CLC ECN OLG RING TBR VIS WRA	7749	- PATRICIA TAYLOR ALT CLC HRB OLG REC RING TBR WLD WRA
7856	- PATRICIA TALBOT ALT CLC TBR WRA	3900	- PHILLIPA TAYLOR ALT CLC HRB RDS TBR WRA
9815	- TODDTALEAK CLC HRB OLG TBR WRA	10503	- RICHARD D TAYLOR ALT CLC HRB
7520	- KATHRYN TALINJAK, ALT CLC HRB OLG REC RING TBR WLD WRA	1410	- SHARON TAYLOR CLC REC
2834	- BLAINE C TANK ALT CLC HRB OLG RDS REC TBR VIS WLD WRA	8982	- SHARON TAYLOR, CLC TBR
2272	- DANIEL N TANNER, ALT CLC HRB OLG TBR WLD WRA	303	- STELLA TAYLOR LC TBR V
5387	- GREG J. TANNER ALT CLC HRB OLG REC RING TBR WLD WRA	6853	- TOM TAYLOR CLC TBR
2765	- REBECCA TANNER CLC TBR	7068	- TOM TAYLOR ALT CLC ECN HRB OLG REC RING TBR WLD WRA
3218	- JOAN H TANNHEIMER CLC OLG TBR WRA	4292	- WILL TAYLOR ALT CLC HRB OLG RDS TBR TRL WLD TRL WLD WRA
7361	- ADAM TANTNER CLC OLG TBR WRA	2269	- G I TAYLOR, ALT TBR
4877	- NICOLE TANZE ALT CLC HRB OLG RING TBR WLD WRA	9654	- ROBERT TAYRIEN ALT CLC TBR WRA
7238	- CRAIG R TANZIA ALT CLC ECN OLG REC RING TBR VIS WRA	68	- MR. & MRS DONALD TEAGUE CLC HRB REC TBR WLD WRA
7237	- LORIT TANZIA, ALT CLC ECN OLG REC RING TBR VIS WRA	2349	- MR & MRS DONALD TEAGUE, ALT CLC HRB WLD
4341	- PATRICIA & WILLIAM TAPPE CLC HRB RING TBR	6465	- WAYNE TEAGUE, ECN HRB RDS TBR TRL
4170	- MR & MRS TAPPERO CLC HRB REC	6869	- JERRY TECKLIN ALT CLC HRB OLG RDS REC TBR TRL
7659	- LAURA TARVER ALT CLC TBR VIS WRA	6993	- JERRY TECKLIN ALT CLC HRB OLG REC RING TBR WLD WRA
12033	- RANDY TASSI, TBR	11215	- JERRY TECKLIN CLC RING
2561	- JOE TAYLOR	1312	- JOHN TECKLIN ALT CLC HRB OLG REC TBR WLD WRA
9585	- STEVE TAYLOR	9047	- JOHN TECKLIN ALT CLC HRB OLG REC RING TBR WLD WRA
10705	- DUAYNE TATEM ALT CLC TBR WRA	5363	- GARY TEELE ALT CLC HRB OLG REC RING TBR WLD WRA
2766	- RACHEL TAUB, CLC REC	9208	- MARY S TEELING CLC HRB RDS TBR VIS
9156	- JOHN TAURO ALT CLC ECN OLG RING TBR VIS WRA	9180	- MARY TEFFETELLER ALT CLC ECN OLG RING TBR VIS WRA
7633	- ELIZABETH TAUSCZIK ALT CLC TBR WRA	3010	- TEHAMA FLY FISHERS NANCY CULBERTSON CLC TBR
6853	- DOROTHY TAVARES CLC TBR	8521	- ALEX TEHRAUS CLC OLG TBR WLD WRA
5391	- KAREN TAYAWA ALT CLC HRB OLG REC RING TBR WLD WRA	991	- PEGGY, EGGEN & BETH TEICHMEIR CLC TBR
10660	- ANNA TAYLOR ALT CLC ECN OLG RING TBR VIS WRA		

1595	- JAMES W TEIPNER TBR	2159	- TERRY L THOLE CLC HRB
9950	- C R TEKNS CLC GEN HRB TBR	3500	- EDWARDTHOLGER CLC TBR
7251	- FRANTELIEMAN ALT CLC TBR WRA	2881	- ALBERT 8 MARY THOMAS TBR
825	- BARBARA & BILL TELLMAN ALT CLC HRB RDS	1347	- BILLIE L THOMAS CLC FLE GEN HRB
12180	- BARBARA & BILL TELLMAN ALT CLC HRB REC WRA	2518	- BILLIE L THOMAS ALT CLC HRB OLG TBR WLD WRA
7769	- HERB TELLMAN. CLC TBR	9475	- CHERYL THOMAS ALT CLC TBR WRA
10653	- JOHNS TENDALL ALT CLC ECN OLG RNG TBR VIS WRA	6120	- D THOMAS ALTCLCTBRWRA
9522	- BRIAN TENMA CLC TBR	3782	- DANIEL THOMAS ALT CLC ECN OLG RNG TBR VIS WRA
7733	- MICHELE TENNER ALT CLC HRB OLG REC RNG TBR WLD WRA	7528	- GORDON THOMAS ALT CLC HRB OLG REC RNG TBR WLD WRA
10910	- CHERYL TENNYSON TBR	1038	- HAROLD M THOMAS CLC OLG RNG WRA
10901	- JULIE TENNYSON TBR	475	- JACKIE THOMAS CLC H2O OLG REC TBR WRA
2621	- MIKE TENWSON. TBR	4324	- JOSEPH THOMAS CLC
10902	- MIKE TENNYSON GEN	2335	- JULIE A THOMAS ALT CLC H2O HRB OLG REC TBR WLD WRA
10913	- SANDRA TENNYSON TBR	10063	- LINDA THOMAS ALT CLC HRB OLG REC RNG TBR WLD WRA
10915	- TIM TENNYSON TBR	10794	- NATASKA THOMAS CLC ECN HRB TBR VIS WRA
10275	- SHELEY TENPHI. ALT CLC TBR WLD WRA	6051	- PATRICK THOMAS ALT CLC HRB OLG REC RNG TBR WLD WRA
10599	- STANFORDS TEPFER REC	2358	- RICHARD THOMAS CLC TBR WRA
7318	- PAULA TEPHTY. ALT CLC TBR WRA	3400	- RICHARD 8 CAROL THOMAS CLC TBR
7985	- TERESUZE ALT CLC HRB OLG REC RNG TBR WLD WRA	12079	- RUTH THOMAS CLC H2O HRB OLG RDS TBR TRL WLD
7058	- WILMA TERRELL. ALT CLC HRB OLG REC RNG TBR WLD WRA	3896	- RUTH B THOMAS H2O HRB OLG TBR TRL WLD
9308	- BILL & MARIE TERRY. CLC H2O HRB REC TBR VIS	10361	- SCOTT THOMAS. AIR CLC WRA
3122	- JEAN TERRY ALT ECN GEN	7046	- STEPHEN J THOMAS ALT CLC TBR WRA
2783	- TAMMY TERRY TBR	8842	- STEVE THOMAS. ALT CLC HRB
3257	- MICHAEL TERZICH CLC ECN HRB OLG REC TBR VIS WRA	3500	- O THOMOS CLCTBR
3743	- TEXAS BUILDERS KATHERINE ALDAY ALT ECN TBR	3707	- CRAIG THOMPSEN. RDS VIS
5863	- CELI THAANUM. ALT CLC HRB OLG REC RNG TBR WLD WRA	3705	- DEBRA THOMPSEN CLC TBR
6787	- ADRIANNE THACKER ALT CLC HRB OLG REC RNG TBR WLD WRA	1638	- BRUCE THOMPSON CLC RDS
10680	- H. GORDON THAMSON. ALT CLC ECN OLG RNG TBR VIS WRA	2149	- COREY THOMPSON ALT CLC TBR
10152	- MALAY THANGTHIP CLC TBR	5671	- DAVE THOMPSON ALT CLC HRB OLG REC RNG TBR WLD WRA
7300	- JAMES G THANTON. DC ALT CLC ECN OLG RNG TBR VIS WRA	8538	- GENE THOMPSON ALT CLC ECN OLG RNG TBR VIS WRA
11045	- TERESA THARPE. ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	3872	- HARRIET & ARTHUR THOMPSON CLC HRB TBR
5599	- EVAN M THATCHER. ALT CLC HRB OLG REC RNG TBR WLD WRA	2818	- HENRY S THOMPSON. ALT CLC HRB OLG TBR WLD WRA
4476	- KEN THATCHER. REC WRA	10009	- JED THOMPSON CLC GEN HRB TBR
7203	- OLA THATCHER ALT CLC ECN OLG RNG TBR VIS WRA	4779	- L THOMPSON. CLC OLG TBR WRA
107	- STEVEN THAW ALT CLC HRB OLG RDS RNG SIA TBR WRA WSR	3316	- LAURY THOMPSON CLC FSH HRB TBR
2456	- CHUCK THAYER CLC HRB REC TBR WRA	724	- LAVONNE THOMPSON TBR
9979	- ANN THEILEN. ALT CLC TBR WRA	713	- LELAND THOMPSON WRA
1309	- S THELAN. ALT CLC ECN HRB OLG REC TBR VIS WLD	8876	- LINDA A THOMPSON ALT CLC HRB OLG TBR WLD WRA
1142	- THEONE M THELEN ALT CLC	3175	- MARY THOMPSON GEN TBR
7698	- EILEEN THEODORE. ALT CLC TBR TRL WRA	5954	- MAUAU THOMPSON ALT CLC HRB OLG REC RNG TBR WLD WRA
6088	- KATHLEEN H THEOFULD ALT CLC HRB OLG REC RNG TBR WLD WRA	4454	- MR & MRS RAY THOMPSON. CLC REC
9718	- AUGUSTA THIEL ALT CLC ECN OLG RNG TBR VIS WRA	9	- MR AND MRS FAY THOMPSON CLC
7553	- PATRICIA THINNES ALT CLC ECN OLG RNG TBR VIS WRA	10363	- PAT THOMPSON CLC HRB
		8037	- PAUL RICHARD THOMPSON ALT CLC ECN HST OLG RNG TBR VIS WRA
		5953	- RAY THOMPSON ALT CLC HRB OLG REC RNG TBR WLD WRA
		2490	- RAY & JOANNE THOMPSON CLC DRT H2O LND OLG RDS REC TBR WLD
		164	- ROBERT THOMPSON CLC TBR
		1569	- ROD & TAMI THOMPSON ECN TBR
		5659	- S G DISCRE THOMPSON ALT CLC ECN OLG RNG TBR VIS WRA

790	- STANLEY & CORA THOMPSON TBR	1309	- TIM TIRAPELLE ALT CLC ECN HRB OLG REC TBR VIS WLD
8251	- SUSAN THOMPSON ALT CLC ECN OLG RNG TBR VIS WRA	9731	- SANDRA TISHLARICH. ALT CLC ECN OLG RNG TBR VIS WRA
550	- SUSI THOMPSON' CLC	8974	- TED TOAL ALT CLC ECN FLE GEN HRB OLG RDS REC RNG TBR T RL VIS WRA
4967	- T R THOMPSON ALT CLC HRB OLG TBR WLD WRA	2835	- BILLIE TOBEY ALT CLC GEN HRS OLG TBR WLD WRA
7112	- VERONIQUE THOMPSON ALT CLC ECN OLG RNG TBR VIS WRA	8873	- CUFF TOBEY. ALT CLC HRB OLG REC RNG TBR WLD WRA
11020	- MARK THOMPSON. ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA	6792	- PAM TOD ALT CLC HRS OLG REC RNG TSR WLD WRA
2629	- S THOMPSON-SHORT CLC HRB OLG TBR WRA	6791	- ROBIN TOD ALT CLC HRB OLG REC RNG TBR WLD WRA
4359	- JAMES THOMSON' ALT CLC HRB	9659	- JAN TODD ALT CLC TBR WRA
10682	- M A R Y B N THOMSON. ALT CLC HRB OLG REC RNG TBR WLD WRA	3500	- MARILYN TODD CLC TBR
3368	- SUZIE THORN REC WIN WRA	8833	- MARK TOELKES CLC HRB REC TBR
824	- KENNETH THORNBURG. ECN	12104	- MARK TOELKES CLC HRB TBR
833	- MRS THORNBURG TBR	3209	- TODD & CHERYL TOLHURST ALT CLC HRB OLG TBR WLD WRA
10358	- LONNIE THORNTEN. CLC	6425	- LEUSTOLL ALT CLC HRB OLG REC RNG TBR WLD WRA
6466	- ALGA L THORNTON ALT CLC ECN OLG RNG TBR VIS WRA	6424	- LINDA TOLL ALT CLC HRB OLG REC RNG TBR WLD WRA
3416	- PHILLIS THORSEN ALT CLC HRB	10847	- GREG TOLLIN ECN
3379	- PHYLLIS THORSEN ALT CLC HRB OLG TBR WLD WRA	10848	- JULIE TOLLISIN ECN TSR
9624	- MARLYN THREADGILL CLC OLG TBR WRA	3949	- JACK TOLOMER. ALT CLC ECN H20 HRB OLG TBR WLD WRA
9623	- RICHARD THREADGILL CLC OLG TBR WRA	3172	- MELODY TOMLINSON ALT OLG TBR
6830	- WILLIAM THRE FALL ALT CLC HRB OLG TBR WLD WRA	9152	- MELODY TOMLINSON ALT CLC HRB OLG REC RNG TBR WLD WRA
2824	- EDWARD L THRETKELD. CLC	939	- MICHAELS. TOMLINSON TBR
2914	- TAD THROWER WLD	11000	- BETH TOMUNSON ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA
2636	- PHILIP THUNENS. CLC ECN FSH GEN HRB TBR	6529	- ANGELA TOMM ALT CLC HRB OLG REC RNG TBR WLD WRA
2636	- BETTY THUNENS. CLC ECN FSH GEN HRB TBR	5673	- SHERYLE TOMSON. ALT CLC HRB OLG REC RNG TBR WLD WRA
2636	- PHILIP E THUNENS. CLC ECN FSH GEN HRB TBR	2990	- MARK L T O W CLC ECN OLG TBR
9242	- M G THURMOND CLC FSH H20 HRB OLG OWL PLN RDS REC RNG TBR TRL VIS WLD WRA	3943	- MARK L TONY. CLC ECN TBR
34	- LEE J. THURSTON. ECN OLG TBR	97w	- MELINDA L TOOMAY ALT CLC TBR WRA
147	- LEE J THURSTON ALT ECN HRB OLG TBR	10507	- TAD TOOMAY CLC ECN
6709	- BEATRICE THYS. ALT CLC HRB OLG REC RNG TBR WLD WRA	9759	- TAD B TOOMAY ALT CLC TBR WRA
2851	- CHERYL & RON TIBURZI. CLC HRB OLG REC TBR WRA	5440	- MINDY TOOMEY. ALT CLC RDS RNG
29	- CHERYL, RON & SONJA TIBURZI' HRB RDS REC TBR VIS	11693	- MR & MRS JACKTOOTELL CLC
1976	- LUCILE A TICE CLC ECN	1815	- MRS JACKTOOTELL CLCTRL
10438	- RUBY TIDWELL CLC H20 HRB REC TBR VIS	3500	- CHESTER TOPL. CLC TSR
3358	- J TIELSCH. ALT CLC ECN HRB TBR WRA	109	- MRS HOWARD F TOPPING CLC HRB RDS TBR VIS
6851	- MARK TIEMAN. TBR	1347	- SUE E TORNGREN CLC FLE GEN HRB
5906	- BILL TIFFIN ALT CLC ECN OLG RNG TBR VIS WRA	1733	- HO'L' TORNHEIM CLC ECN HRB TBR VIS WR
1768	- DEBORAH TIGUE CLC TBR	5709	- HOLLY TORNHEIM. CLC TBR
8910	- DEBORAH TIGUE. ALT CLC ECN OLG RNG TBR VIS WRA	3500	- FRANK TORREN CLC TBR
3500	- IRENE TINDEL CLC TBR	4754	- STWETORRES CLC
7567	- ROBERT L TINER. ALT CLC ECN OLG RNG TBR VIS WRA	10244	- VICTOR M TORRES ALT CLC TBR WRA
1572	- RICHARD D TINNEY OWL TBR	7631	- JORGE TORREY. ALT CLC TBR WRA
11668	- RICHARD D TINNEY OWL TBR	9298	- JEAN TORVIK. ALT CLC ECN OLG REC RNG TBR VIS WRA
9627	- LAURA TINTI ALT CLC TBR WRA	1674	- JOAN TORVIK ALT CLC RDS
863	- JAMES TIPELT ALT CLC ECN GEN TBR	5400	- LESLIE TORVIK. CLC
8252	- PIERCE TIPPERT ALT CLC ECN GEN OLG RNG TBR VIS WRA	6899	- JOHN L TORY ALT CLC HRB OLG REC RNG TBR WLD WRA
		10574	- PETE TOSTE. ECN TBR
		1430	- BRECK C TOSTEVIN. ALT CLC ECN FLE HRB OLG OWL REC RNG TBR TRL VIS WLD WRA
		7884	- HOLLEY TOURHEIM ALT CLC HRB OLG REC RNG TBR WLD WRA

2343	- STEVEN TOWERS. ALT CLC ECN TBR VIS	4515	- MALKIN TRIMBLE' CLC H2O RDS REC RNG TBR
11949	- STEVEN TOWERS ALT CLC TBR	940	• BONNIE TRIMMER CLC GEN VIS WLD
1072	- RUSSELL TOWLE CLC OLG TBR VIS WLD WRA	1387	• TRINITY RESOURCE ACTION COUNCIL JUDY A BENDIX ECN GEN TBR
2598	- RUSSELL TOWLE. ALT CLC DRT HST LND RDS REC TBR TRL VIS	892	• KENNETH TRIPLETT ECN TBR
11105	- RUSSELL TOWLE CLC OLG TBR	3529	• LISA TRIPP CLC OLG TBR WRA
7648	- MELISSA TOWNE ALT CLC TBR WRA	1996	• KIM TRISDALE ALT ECN GEN
4904	- DAVID & NORMATOWNSEND ALT CLC ECN OLG RNG TBR VIS WRA	2113	• PAT TROBERG. ALT TBR
6853	- L H TOWNSEND CLCTBR	9240	• ALLAN W TROERT. CLC H2O HRB REC TBR VIS
5897	- MAE TOWNSEND. ALT CLC ECN OLG RNG TBR VIS WRA	10550	• JOANNE TROKEY. CLC GEN HRB TBR
3377	- CLAUDIA TOWNSHEND ALT ECN GEN	5222	• JESSICA TROPH ALT CLC HRB OLG REC RNG TER WLD WRA
3107	- MIKE TOWNSLAND ALT ECN GEN	2886	• CHRISTOPHER R TROT. GEN TBR
3108	- MRS TOWNSLAND ALT ECN GEN	300	• ROSS JERRY TROTTER' CLC ECN FLE H2O HRB REC TBR VIS WRA
1308	- NANCY E & DANIEL TRACEY, TBR	4685	• ROBERT TROUT ALT CLC TBR WRA
6852	- PATTI J & TIMOTHY TRACEY CLC TER	63	• CHERYL TROUTWINE H2O HRB OLG RDS SIA TBR WRA
5103	- CELINA TRACY AIR ALT CLC HRE OLG REC RNG TBR VIS WLD WRA	12183	• SCOT N TROWBRIDGE CLC ECN GEN HRB TBR
10606	- NANCY E TRACY CLC H2O HRB REC TBR VIS	2419	• BRUCE TROXEL ECN REC TRL
3875	- BRUCE C TRACY, M C CLC REC WLD WRA	5547	• DAVID TROXEL ALT CLC TBR WRA
1955	- JULIE TRAHAN WRA	9707	• C ELIZABETH TROYER ALT GLC ECN OLG RNG TBR VIS WRA
12252	- KATIE TRAN' ALT CLC TBR WRA	11163	• TRUCKEE-DONNER HISTORICAL SOCIETY JAMES R SMITH, PRESIDENT CLC HST TBR
4104	- TERRY & DANETTE TRANCHIMONE ALT CLC HRB OLG REC RNG TBR WLD WRA	9743	• ANNA TRUEDSON. ALT CLC ECN OLG RNG TBR VIS WRA
6744	- HARRY TRANMER. REC	3032	• LLOYD H TRUMAN. REC TBR
7402	- JIMMY TRANT ALT CLC HRB OLG REC RNG TBR WLD WRA	2046	• WILLIAM TRUMLEF. ALT ECN GEN
5127	- KELLY TRANT ALT CLC HRB OLG REC RNG TBR WLD WRA	4876	• DENNIS TRUMP ALT CLC HRB OLG REC RNG TBR WLD WRA
7750	- SUSAN TRANT. ALT CLC HRE OLG REC RNG TBR WLD WRA	466	• HELEN TSAI WSR
6576	- GENE R TRAPP, PHD. ECN RECTRL	8871	• MELLISSA TSCHAN' ALT CLC HRB OLG REC RNG TBR WLD IA
8990	- DONALD L TRASK CLC GEN HRB OLG TBR WRA	10681	• TIM TSCHAMZ ALT CLC ECN OLG RNG TBR VIS WRA
6121	- ERIC TRAVETT ALT CLC TBR WRA	3592	• CORRINA TUCKER ALT CLC HRB OLG REC RNG TBR WLD WRA
10000	- TIFFANY TREADWAY' CLC GEN HRB TBR	8261	• DENNIS TUCKER ALT CLC ECN OLG RNG TBR VIS WRA
7024	- JOHN TREBURG' ALT CLC TBR WRA	1173	• ELIZABETHA TUCKER CLC ECN TBR
2802	- TREE I CO NORMAN J PERRY TBR	9463	• GAIL TUCKER. ALT CLC HRB OLG REC RNG TBR WLD WRA
6600	- SHE TF : ALT CLC HRB OLG REC RNG R' RA	3382	• RICHARD TUCKER ALT CLC HRB TBR
15	- ILA JO CLC	3847	• RICHARD TUCKER ALT HRB RDS TBR
1150	- ILA TREJO. CLC REC TBR	5814	• RUSSELL TUCKER. ALT CLC HRB OLG REC RNG TER WLD WRA
5901	- KATHLEEN T. TRELEVEN ALT CLC ECN OLG RNG TBR VIS WRA	4653	• MARY TUDER' ALT CLC HRB TER WRA
2195	- TREMAIN CLC	3657	• MART TUERY CLC GEN HRB RDS
2555	- ANN TREMC ALT CLC HRB TBR WRA	6127	• HEIDI TUFFIAS ALT CLC TBR WRA
3039	- ANN UREU' ALT CLC HRB OLG REC RNG TBR WLD WRA	8889	• MONIC TUGAEI F ALT CLC ECN OLG RNG TBR VIS WRA
1538	- PEGGY TRENENFIAN ALT CLC ECN FLE HRB	2608	• VICTOR TUINTONE TBR
3150	- BECKEY TRENTLOOP CLC HRB	3243	• TUMAC LUMBER CO , INC PAUL MCCRACK-EN TBR
6500	- YSIONNI TREVETHICK ALT CLC ECN OLG RNG TBR VIS WRA	6646	• ALTA TURA ALT CLC FSH HRB OLG TBR
4870	- KATHI TRIBBY ALT CLC HRB OLG REC RNG TBR WLD WRA	9527	• FLORENTINE TURCANU CLC ECN TBR
2551	- TRIBUTARY WHITEWATER TOURS DANIEL J BUCKLEY III CLC VIS WRA	9349	• AUSTIN TURIACE CLC FSH H2O HRB REC TBR VIS
6271	- C TRICKSEN ALT CLC TER WRA	10547	• JENNA TURK CLC GEN HRB TBR
4134	- DAVID TRIMBLE CLC H2O REC WLD WRA	2421	• AYSENRKSEUER CLCECNGEN HRE TBR VIS WRA
1136	- DOUGLAS C TRIMBLE CLC HRB TBR	10826	• VIOLA TURNEAUGH CLC H2O HRB REC TBR VIS
2158	- GEORGE M TRIMBLE ALT CLC ECN HRB REC RNA RNG VIS WRA		

438	- WILLIAM R TURNBOUGH' TBR	7723	- DANALA E. UMOURRET' ALT CLC HRB
4872	- JIM TURNEN' ALT CLC HRB OLG REC RNG TBR WLD WRA	10870	- OLG REC RNG TBR WLD WRA
5574	- CHITEA TURNER' ALT CLC ECN OLG RNG TBR VIS WRA	8258	- STEPHANIE UMPHRESS. CLC TBR
3150	- DAVID TURNER' CLC HRB	8967	- DOYLE UNDERWOOD ALT CLC HRB OLG REC RNG TBR WLD WRA
3193	- DEWEY TURNER' ALT CLC HRB OLG TBR WLD WRA	586	- GREG UNDERWOOD. REC WRA
9300	- DORIS & JERRY TURNER' CLC H2O HRB REC TBR VIS	3716	- JOHAN UNDERWOOD CLC HRB OLG RNG
5587	- EUGENE TURNER' ALT CLC HRB OLG REC RNG TBR WLD WRA	10936	- WILLIAM UNDERWOOD' CLC
2992	- JOHN TURNER' ALT CLC HRB OLG TBR WLD WRA	479	- PETER UNDERWOOD' CLC ECN GEN HRB TBR
7123	- LIN TURNER' ALT CLC ECN OLG RNG TBR VIS WRA	501	- MR & MRS WALTER UNGEHEUER' OLG
5543	- MARK TURNER' ALT CLC TBR WRA	481	- MR & MRS WALTER UNGEHEUER' ALT CLC HRB RNG WRA
7968	- ROBERT TURNER' ALT CLC TBR WRA	11169	- MRS WALTER UNGEHEUER' CLC
11332	- RUSSELL TURNER' ECN RNG TBR	1328	- ROBERT UNHOLZ' ALT CLC OLG OWL RDS RNG SIA TBR VIS WIN WLD WRA
3538	- TOBY TURNER' CLC ECN OLG TBR WRA	5983	- UNITED PIPE & SUPPLY TAYLOR RAMSEY' ECN TBR
2033	- VELMA TURNER' ALT ECN GEN	3062	- GARY UPTON' ALT CLC HRB OLG REC RNG TBR WLD WRA
747	- CARL TURNLOW' TBR	6640	- PETEUPTON' TBR
2829	- JEANETTE TURPIN. TBR WRA	10883	- DONNA URAN' CLC HRB RDS
6818	- BOB TUTTLE' ALT CLC HRB OLG TBR WLD WRA	8483	- DONNA URAN' HRB RDS REC TBR WIN
5959	- E LOUISE TUTTLE' ALT CLC HRB OLG REC RNG TBR WLD WRA	7609	- VICTOR URBAEZ. ALT CLC HRB OLG REC RNG TBR WLD WRA
2547	- SARA TUTTLE. CLC ECN	6641	- URBAN' ALT CLC TBR WRA
4107	- STEPHEN TUTTLE' ALT CLC ECN GEN REC TBR	5102	- MONICA URENA' CLC ECN
7894	- STEPHEN TUTTLE. ALT CLC HRB OLG REC RNG TBR WLD WRA	6510	- RAMONA URIBE ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
3474	- STEPHEN K. TUTTLE. CLC ECN TBR WRA	8745	- DAVID URITERMAN. ALT CLC ECN OLG RNG TBR VIS WRA
5960	- WILLIAM K TUTTLE' ALT CLC HRB OLG REC RNG TBR WLD WRA	6537	- JOHN URLIN. CLC HRB LND OLG RNG TBR
4614	- BRIAN TWEDT. CLC DRT GEN H2O REC VIS	8520	- BERT URREA' ALT CLC HRB OLG REC RNG TBR WLD WRA
442	- RUSSELL L TWEET. CLC	1462	- TESSIALN URTEEN' CLC FLE OLG TBR WRA
1295	- EH. TWIETMEYER' ECN	1414	- US ENVIRONMENTAL PROTECTION AGENCY CHARLES MURRAY, JR' DRT FLE FSH H2O HRB LND RNG TBR
400	- MILO TWRAYLOCK' RDS TBR WRA	1264	- US HOUSE OF REPRESENTNES HONOR- ABLE VIC FAZIO. ALT CLC HRB LND TBR WIN WRA
8474	- NANCY K. TYLER. ALT CLC HRB OLG TBR TRL WRA	20452	- US HOUSE OF REPRESENTNES HONOR- ABLE WAUY HERGER' ECN GEN US HOUSE OF REPRESENTATNESHONOR- ABLE ROBERTT. MATSUI' CLC ECN HRB REC TBR
6590	- TOBI L TYLER' ALT CLC ECN HRB OLG RDS RNG TBR TRL WLD WRA	9289	- USDA. FS-PNW FISHERIES & WILDLIFE CLC FSH TBR WLD
8469	- WALTER S TYLER. ALT CLC OLQ TBR TRL WRA	11589	- USDI - BLM ED HASTEY' LND VIS WSR
10540	- CATHY TYNER' CLC GEN HRB TBR	3232	- USDI BUREAU INDIAN AFFAIRS ANN BERG CLC
3500	- DAVID TYNTOR' CLC TBR	1234	- USDI BUREAU INDIAN AFFAIRS DONALD B KNAPP HST
2079	- DW. TYOELKER' GEN WRA	11328	- USDI FISH & WILDLIFE GAIL C. KOBETICH ECN FSH SNP WLD
20453	- US DISTRICT COURT THOMAS J. MACBRIDE' CLC GEN TBR	2849	- USDI PATRICIA S I DRT LND VIS WSR
256	- UC DAVIS DEPT OF BOTANY BRUCE G. BALDWIN. ALT OLG RNG SIA TBR WRA	8874	- GEORGIA USHRES' ALT CLC HRB OLG REC RNG TBR WLD WRA
104	- UC DAVIS WILDLIFE & FISHERIES DEPT DIANE SHIRLEY. CLC H2O OLG TBR WLD WRA	2714	- ROBERT W UT; INGER' T
1463	- UC NATURAL RESERVE SYSTEM NORDEN H 'DAN' CHEATHAM' GEN PLN RDS RNA SIA SNP WLD WRA	2239	- FRANK VAERIO. ALT TBI
690	- UC SANTA BARBARA DEPT ECONOMICS WILLIAMS COMANOR. REC	4387	- GINNY VAIL; JN QJOT' CLC
3199	- ANDREW UDOVICH' CLC TBR	10918	- NESTOR VAL S; E CN
8346	- ROBERT UEBEL' ALT CLC HRB OLG TBR WLD WRA	9792	- ZOE LARITIS' ALT CLC TBR WRA
9773	- KEITH UERMISA. ALT CLC TBR WRA	8839	- JORGE VALASQUEZ' ALT CLC ECN OLG RNG TBR VIS V'RA
6066	- RASHIDA UIRZA' CLC RDS TBR	9633	- ADAM VALDEZ. CLC OLG TBR WRA
6851	- KATHY ULOADE' TBR	870	- MARIANN VALI EZ. ECN GEN
3590	- JULIAN ULSETH' ALT CLC HRB OLG REC RNG TBR WLD WRA	6855	- SAMUEL VALE' ALT CLC H2O REC TBR WLD

11023	- JOHN VALENCIA ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	10415	- ED VANDERCOOK ALT CLC TBR WRA WSR
10409	- SHARON B VALENTI ALT CLC ECN TBR WRA	10273	- BARBARA S VANDERKL ALT CLC TBR WRA
5148	- DENA VALIN ALT CLC HRB OLG REC RNG TBR WLD WRA	4319	- MARTIN VANDERLAAN CLC
2256	- JUSTYN R VALLORI ALT CLC HRB OLG TBR WLD WRA	2554	- JANE VANDERLAGG' ALT CLC HRB OLG TBR WLD WRA
11821	- E B VALPY ECN TBR	4029	- PETER & PRISCILLA VANDERPAS' CLC HRB SIA TBR
5570	- THORS VALT. ALT CLC HRB OLG REC RNG TER WLD WRA	4889	- CHRIS VANKRIEDLT ALT CLC HRB OLG REC RNG TBR WLD WRA
5560	- ZOE VALWORTH ALT CLC HRB OLG REC RNG TBR WLD WRA	2191	- JAMIE VANNBERG CLC HRB TBR
274	- RICHARD W VAN ALSTYNE HRB TBR	7152	- RICARDO VANSELL ALT CLC TBR WRA
20451	- ATTORNEY GENERAL N K. VAN DE KAMP. CLC DRT ECN FLE H2O HRB LND REC TBR TRL WLD WRA	10327	- HARVEY VANYI ALT CLC ECN OLG RNG TBR VIS WRA
853	- FRED VAN BILEU ECN TBR	10328	- JULIE VANYI ALT CLC ECN OLG RNG TBR VIS WRA
848	- J VAN EL ECN TBR	6111	- BARBARA VARGAS ALT CLC TBR WRA
8394	- H VAN I A CLC ECN 3 RNG TBR VIS /F	10004	- NATALIE VARMIEN CLC GEN HRB TBR
6855	- ANNEKE VAN CLEE ALT CLC H2O REC TBR WLD	9714	- DIANE VARNEY ALT CLC ECN OLG RNG TBR VIS WRA
3150	- JEFFREY & LINDA VAN DELINDER CLC HRB	9713	- N D VARNEY. ALT CLC ECN OLG RNG TBR VIS WRA
e896	- SAM VAN DERAOR ALT CLC HRB OLG REC RNG TBR WLD WRA	4878	- NATHALIE VARNIESE ALT CLC HRB OLG REC RNG TBR WLD WRA
7552	- LESLIE VAN DUKE' ALT CLC ECN OLG RNG TBR VIS WRA	4130	- HAROLD VARNUM' CLC ECN HRB OLG TBR
6482	- WILLIAM VAN DYCK ALT CLC TBR	6579	- KATRINA VARNUM. CLC TBR
8220	- DAVE VAN DYKE. ALT CLC HRB OLG REC RNG TBR WLD WRA	6860	- GEORGIA VAS ALT CLC HRB OLG
3224	- SUSAN VAN EATON CLC OLG TBR WRA	1309	- TUIE VASAVADA. ALT CLC ECN HRB OLG REC TBR VIS WLD
1154	- ELLEN VAN FLEET' CLC	9476	- ANGELA VASCONCELLOS. ALT CLC TBR WRA
1319	- ELLEN VAN FLEET. CLC	2632	- DEANA VASEY ECN TBR
186	- ELAINE VAN GUNST. CLC TBR	2594	- LARRY F VASEY TBR
2108	- HENDRIK VAN HEEK CLC	2633	- MIKE VASEY' ECN TBR
6281	- JOHN VAN HOVE ALT CLC REC TER WRA	3162	- TONI VASEY' GEN
5327	- CHRIS VAN KRIEDLT ALT CLC HRB OLG REC RNG TBR WLD WRA	3521	- JOLEN VASKO. ALT CLC HRB OLG TBR WLD WRA
9646	- DENISE VAN KRIEDT TBR	1902	- ALAN VASQUEZ CLC ECN HST OLG OWL TBR
1547	- DENISE VAN KRIEDT-BARAOWSKI CLC H2O HRB OLG OWL PLN RDS RNG TBR TRL VIS WIN WLD WRA	9686	- DAWN VASQUEZ ALT CLC TBR WRA
5923	- SCOTT VAN LINGE ALT CLC ECN OLG RNG TBR VIS WRA	6145	- MICHAEL VASQUEZ ALT CLC TBR WRA
10983	- DAN VAN METER ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	11104	- RANDY VASQUEZ CLC ECN HRB
1207	- DALE VAN METRE CLC DRT H2O HRB REC TBR WLD WRA	8975	- MR & MRS. F VASTANO. CLC
9570	- MR & MRS. BYRON VAN METRE CLC H2O HRB REC TBR VIS	3480	- DAVID VASTINE. REC WIN
4124	- THOMAS VAN NOORD ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	4182	- MARCIA VASTINE REC WIN
3150	- BARBARA VAN PELT CLC HRE	4035	- CATHERYN VATUONE ALT CLC ECN OLG RNG TBR VIS WRA
8756	- HENRY R VAN RYN ALT CLC ECN OLG RNG TER VIS WRA	509	- N VAUGHAN CLC REC TBR VIS
6849	- CAROLYN VAN STRALEN CLC TBR	8143	- JEAN T VAUGHAN CLC H2O HRB REC TBR VIS
6173	- JIM VAN VALEN ALT CLC RDS TBR	8176	- RICHA R VAUGHAN ALT CLC HRB OLG REC RNG TBR WLD WRA
3867	- PETER & BILL J VAN ALIN ALT	6436	- TERRY VAUGHAN ALT CLC ECN OLG RNG TBR VIS WRA
4099	- MR & MRS VAN VLACK C ON HRB TBR VIS WR	7554	- LAVERNE VAUGI I ALT CL ECN OI RNG TBR VIS WRA
4413	- MR & MRS VAN VLECK RNG	3997	- NADINE VAUGHN-KROEKER ALT CLC HRB OLG REC RN IF WLD WRA
5382	- BRADLEY VANCE ALT CLC HRB OLG REC RNG TBR I WRA	1322	- MANLEY VAU I-PAUL CLC
9228	- KAR T ALT CLC ECN OLG RNG TE IS WR	154	- GARY D VAUGHT CLC OLG REC TRL WRA
2402	- PETER VANDEI ALT CLC HRB OLG TBR WLD WRA	1149	- VIVIAN V/ U3I CLC TBR
		11051	- SUE VAUPEN ALT CLC ECN FSH H2O HRB SNP I TRL WLD WR
		6439	- JAN A VAUS A T C ECN OLG RNG I IS WRA

11165	- DORIS VOIRA. CLC TBR	5233	- VICKI VOIGHT. ALT CLC HRB OLG REC
10811	- PATRICK VEARNE. CLC OLG TBR WRA		RNG TBR WLD WRA
545	- PIK VEBLEN ECN REC TBR	4977	- RICHARD & JOAHN VOLBERG. GEN REC
35w	- TIMOTHY VEIN CLC TBR		RNA RNG TRL WIN WRA
20500	- GRACE S VEITCH. TRL	12	- KURT E VOLCKMAN ECN WSR
9878	- MARGARET CUMMINS VEITH ALT CLC	3150	- CHRIS VOLIN CLC HRB
8063	- ESTHER VELASQUEZ ALT CLC TBR WRA	10084	- KEITH VOLL ALT CLC ECN OLG RNG TBR
9439	- ANGELICA VELIZ ALT CLC ECN OLG RNG		VIS WRA
	TBR VIS WRA	2354	- WILLIAM S VOLPE, ATT-AT-LAW ALT CLC
6504	- DOUGLAS S VENTLING ALT CLC ECN		DRT HRB RDS TBR TRL WIN
	OLG RNG TBR VIS WRA	3733	- HERMAN VON EORSTEL RDS TBR
6852	- PAUL VENTOLIERI CLC TBR	6861	- WALTER VOS ALT CLC ECN GEN H2O
3159	- TERRY VENTON TBR		HRE OLG RNG TBR VIS WRA
2383	- SYLVIA VERANGE CLC TBR	8780	- RICHARD & LEE ANN VOSKES ALT CLC
10151	- BRIAN VERAZ CLC HRE TBR		ECN OLG RNG TBR VIS WRA
5533	- ANTHONY VERBARICK ALT CLC TBR WRA	1309	- JOHN S VOSMER ALT CLC ECN HRB OLG
6513	- ADENA VERDI ALT CLC HRB OLG REC		REC TBR VIS WLD
	RNG TBR WLD WRA	11077	- RONALD VOSS GEN OWL TBR WRA
6514	- RONALD VERDI ALT CLC HRB OLG REC	1309	- GENE VOSSMER, JR ALT CLC ECN HRB
	RNG TBR WLD WRA		OLG REC TBR VIS WLD
276	- WONNE VERPLANK CLC RDS	10443	- STILLMAN VOTARO CLC H2O HRB REC
3664	- PAUL R. VESPER CLC HRB LND OLG RDS		TBR VIS
	TRL WRA	5606	- JACOB VOY ALT CLC HRE OLG REC RNG
894	- GARY VESPERMAN ALT ECN RDS RNG		TBR WLD WRA
	TBR WRA	10695	- GEORGE VOYLATZES CLC H2O HRB REC
3500	- LINDA VESS CLC TBR		TBR VIS
10822	- THOMAS VESTERLE. CLC OLG RDS TBR	7310	- RICK VOZT ALT CLC ECN OLG RNG TBR
3563	- SUSAN VICKANY. ALT CLC HRB OLG TBR		VIS WRA
	WLD WRA	7403	- GEORGE VRAHNES ALT CLC HRE OLG
9838	- PAM VICKERS ALT CLC TBR WRA		REC RNG TBR WLD WRA
402	- JACK VICTOR. TBR	9149	- MARGUERITE VULFS CLC OLG TBR WRA
5432	- ALY VIEIRA. CLC TBR	9905	- VILNIS VULFS ALT CLC HRB OLG REC TBR
4009	- MEGAN VIEIRA ALT CLC HRB OLG REC		WLD WRA
	RNG TER WLD WRA	3798	- SALLY WACHTEL ALT CLC HRB OLG REC
6379	- BEN VIERLING ALT CLC HRE OLG REC		RNG TBR WLD WRA
	RNG TBR WLD WRA	8410	- KENNETH W WACHTER ALT CLC RDS
5092	- GENEVIEVE A VIERLING. ALT CLC HRB		TBR
	OLG REC RNG TBR WLD WRA	3797	- MRS PAUL WACHTER REC
10023	- JEFF VIERRA. CLC GEN HRB TBR	1907	- JAMES A WADDELL TBR
5971	- PAUL VIERRA ALT CLC HRB OLG REC	10130	- LYNN WADDELL ALT CLC ECN OLG RNG
	RNG TBR WLD WRA		TBR VIS WRA
3500	- RANDY VIGIL. CLC TBR	7219	- LINDA WADDLE ALT CLC HRB OLG REC
1308	- FRANCES VILBRAL. TBR		RNG TBR WLD WRA
5229	- BRENDA VILLARD. ALT CLC HRB OLG REC	5474	- CHERYL WADE ALT CLC ECN OLG RNG
	RNG TBR WLD WRA		TBR VIS WRA
6541	- MOE VILLASENOR ALT CLC ECN OLG	86	- MARYLEE WADE. CLC REC TBR VIS
	RNG TBR VIS WRA	7315	- REBECCA WAEGILL. ALT CLC TBR WRA
2279	- GARY VINCENT CLC	9078	- J WAEJELL ALT CLC HRB OLG TBR WLD
3100	- MRS CLEO A. VINCENT. ALT ECN GEN		WRA
6066	- COLLEEN VINE CLC RDS TBR	10146	- CATHERINE WAGAR ALT CLC ECN OLG
1347	- FRED VIRAMONTES. CLC FLE GEN HRB		RNG TBR VIS WRA
9210	- TOM VIRDEN. CLC	65	- BRUCE WAGGONER. ECN
1761	- MB VITUS, JR GEN	7810	- AUDREY WAGMAD ALT CLC TBR WRA
8327	- MAUREEN VIVINO ALT CLC HRB OLG REC	3150	- ELLIOT WAGMAN. CLC HRB
	RNG TBR WLD WRA	7363	- AMBER WAGNER ALT CLC TBR WRA
629	- GREG VLASEK TBR	4303	- CHERYL WAGNER CLC FSH HRB TER
8813	- GREGORY VLOCH. CLC ECN HRB	4546	- DAWN & ORION WAGNER REC VIS
1191	- DAVID M. VOAN ECN	1474	- DELMER WAGNER. ECN GEN TBR
6647	- MARGARET VODICKA CLC OLG WRA	10318	- DICK WAGNER ALT CLC ECN OLG RNG
11278	- MILAN VODICKA ALT CLC HRB RDS TBR		TBR VIS WRA
11623	- JAMES VOGEL WLD	2882	- GREG A WAGNER CLC GEN
1042	- JAMES M VOGEL ALT CLC H2O HRB OLG	10317	- JOAN WAGNER ALT CLC ECN OLG RNG
	RNG TBR VIS WIN WRA		TBR VIS WRA
6601	- JAMES MARK VOGEL ALT CLC HRB OLG	7864	- KARLE WAGNER ALT CLC ECN HRB OLG
	REC RNG TBR TRL WLD WRA		REC RNG TBR WLD WRA
8321	- JOHN VOGELPOHL ALT CLC HRB OLG	7090	- KENNETH WAGNER ALT CLC ECN OLG
	REC RNG TBR WLD WRA		REC RNG TBR VIS WRA
102	- KRISTIN M VOGEN & KURT E VOLCKAMER		
	CLC REC TER		

1123	- RICHARD WAGNER RDS TBR	1466	- RALPH WALSH ECNTBR
56	- STEPHANIE WAGNER ALT CLC GEN H20 HRB RECTRL VIS WLD	7221	- SHARON WALSH ALT CLC HRB OLG REC RNG TBR WLD WRA
6814	- SCOT WAICHLER ALT CLC ECN H20 REC TBR	204	- THOMAS & ELIZABETH WALBH ALT CLC GEN REC
7175	- LINDA M WAITE ALT CLC TBR WRA	2572	- STEPHEN J WALSH, MC ALT CLC HRB OLG TBR WLD WRA
11007	- LISA VALERIE WALD ALT CLC ECN FSH H20 HRB SNP TBR TRL WLD WRA	7708	- ROBERT G WALTER ALT CLC ECN OLG RNG TBR VIS WRA
6151	- DEBORAH WALDEAR ALT CLC GEN OLG WRA	11145	- DAVID WALTERS CLC ECN GEN HRB PLN TBR
9915	- ROB WALDMAN CLC GEN HRB TBR	8837	- DAVID M WALTERS ECN PLN
3254	- J M WALKENHURST. CLC TBR	8723	- EARLYNE WALTERS CLC ECN HRB LND RDS TBR
2409	- AGNES WALKER ALT CLC HRB OLG TBR TRL VIS WLD WRA	2232	- GREGORY J. WALTERS CLC ECN HRB OLG REC WLD WRA
1829	- DARLYS WALKER CLC	5006	- JIM WALTERS ALT CLC LND RDS TBR
5544	- DOUGLAS WALKER ALT CLC TBR WRA	1045	- LANI WALTERS. CLC OLG
4330	- E G WALKER DRT RNG TBR VIS WLD	1347	- ROBERT WALTERS CLC FLE GEN HRB
11245	- ED WALKER ECN TBR	5920	- STANLEY R WALTERS ALT CLC ECN OLG RNG TBR VIS WRA
5994	- JOHN WALKER ALT CLC HRB OLG REC RNG TBR WLD WRA	4086	- STEPHANIE WALTERS CLC ECN
6665	- JOHN WALKER ALT CLC ECN OLG RNG TBR VIS WRA	6058	- STEPHANIE WALTERS. ALT CLC HRB OLG REC RNG TBR WLD WRA
4745	- JUDY WALKER CLC	6221	- SUSAN WALTERS ALT CLC ECN OLG RNG TBR VIS WRA
6661	- LINDA WALKER ALT CLC ECN OLG RNG TBR VIS WRA	8189	- NAN WALTON. ALT CLC HRB OLG REC RNG TBR WLD WRA
1101	- MIKE WALKER TBR	3181	- TODD WALTON. CLC ECN HRB TBR
9309	- MIKE & LORI WALKER, CLC H20 HRB REC TBR VIS	12072	- TODD WALTON CLC FLE OLG RNG TBR WRA
3417	- MR & MRS B WALKER ALT CLC OLG TBR	1543	- JIM WALUND. GEN TBR
8976	- NANCY M WALKER CLC HRB TBR	7189	- GEORGE WALUORS' ALT CLC TBR WRA
9038	- STEPHEN WALKER ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	1487	- THOMAS L WALZ' ALT OWL VIS WRA
290	- STEPHEN B WALKER, CLC ECN HRB REC	655	- WILLIAM D WAMPLER. ALT ECN
482	- STEVE WALKER ECN TBR	8954	- MARY WANDTHE ALT CLC ECN OLG RNG TBR VIS WRA
11284	- STEVE WALKER CLC TBR	1347	- ELAINA WANG CLC FLE GEN HRB
8832	- FRANCESCA WALKERTOAL CLC ECN FLE OLG RECTBR TRL VIS	7377	- FRANKLIN J. WANG CLC FLE OLG TBR WRA
3628	- LIZBETH WALL ECN RDS TBR	10713	- LIN WANG ALT CLC TBR WRA
498	- WALTER WALL TBR	6915	- SHIRLEY WANO ALT CLC TBR WRA
3247	- BEN WALLACE. CLC FLE REC TBR	3104	- MRS. STANLEY WANGBERG ALT ECN GEN
5955	- GORDON WALLACE ALT CLC HRB OLG REC RNG TBR WLD WRA	8979	- JON R WAPLES' ALT CLC HRB OLG TBR WLD WRA
6254	- JACK WALLACE ALT PLN TBR	1308	- ERMA WAPPLEN. TBR
2772	- LJ DAVID WALLACE CLC REC WSR	4526	- ANN WARBURTON CLC GEN HRB OLG
10944	- LJ DAVID WALLACE ALT CLC ECN HRB TBR WRA	7518	- ANNETTE WARD ALT CLC GEN HRB OLG REC RNG TBR WLD WRA
6250	- ALBERT WALLEACH & DENISE COTTRELL ALT CLC TBR WRA	5236	- CHRIS WARD, ALT CLC HRB OLG REC RNG TBR WLD WRA
2185	- MEGAN WALLLEN' ALT CLC	2744	- CINDY WARD CLC
2333	- JERREE WALLER. MS CLC REC TBR WLD	4224	- JULIUS WARD ALT CLC ECN OLG RNG TBR VIS WRA
7957	- NANCY K. WALLEY ALT CLC TBR WRA	4207	- LEILA WARD ALT CLC HRB OLG REC RNG TBR WLO WRA
10758	- GWEN WALLIS CLC H20 HRB REC TB VIS	6850	- MAUREENSANDRA WARD CLCHRBRDS TBR
7048	- JOHN N WALLNER ALT CLC TBR WRA	6850	- MADGE WARD CLC HRB RDS TBR
5579	- BRIAN WALLY ALT CLC HRB OLG REC RNG TBR WLD WRA	7965	- MICHAEL WARD ALT CLC TBR WRA
4020	- ELIZABETH WALSH ALT CLC HRB OLG REC RNG TBR VIS WLD WRA	1904	- RANDY WARD ECN GEN
1941	- JIM WALSH GEN	9169	- SHANE WARD ALT CLC ECN OLG RNG TBR VIS WRA
6726	- JOHN, LILLIAN & MARIAN WALSH ALT CLC HRB OLG TBR WLD WRA	7335	- SHEILA WARD ALT CLC TBR WRA
11432	- JOHN, LILLIAN & MARIAN WALSH ALT CLC HRB OLG RDS TBR TRL WLD	1726	- STEVEN WARD CLC ECN HRB TBR VIS WRA
9589	- KATIE WALSH ALT CLC HRB OLG RDS REC RNG TBR WLD WRA	9060	- TEDD WARD ALT CLC HRB OLG REC RNG TBR WLD WRA
10578	- MICHAEL R WALSH CLC HRB		
12236	- MR & MRS JOHNS WALSH CLC H20 HRB REC TBR VIS		

8593	DANIEL WARDEN ALT CLC H2O HRB LND OLG RDS REC TBR W WLD	7587	- LORENA WASLEY ALT CLC ECN OLG RNG TBR VIS WRA
7054	- DAVID WARDEN ALT CLC HRB LND OLG REC RNG TBR WLD WRA	6361	- RUTHANN WASLEY ALT CLC HRB OLG REC RNG TBR WLD WRA
9100	- EMARY WARDEN ALT CLC ECN OLG RNG TBR VIS WRA	695	- THOMAS E WASLEY ECN TBR
2973	C A LAW ECN TBR	4538	- SARAH WASSELS CLC HRB WRA
9117	ABIGAIL J WARDWELL ALT CLC HRB OLG REC RNG TBR WLD WRA	7508	- JOHN WATER-BRIDGES ALT CLC HRB OLG REC RNG TBR WLD WRA
3858	PAUL WARENCYIA ALT CLC TBR WRA	5499	- JAMES WATERFALL ALT CLC HRB OLG REC RNG TBR WLD WRA
3854	DEE E WARENEYIA ALT CLC FSH TBR TRL WRA	6393	- RANA WATERFALL ALT CLC ECN OLG RNG TBR VIS WRA
396	DAVID WARIN TRL VIS WIN	6840	- ANDREW WATERMAN CLC ECN FLE GEN HRB OLG RNG TBR VIS
2408	- BILL WARMLY CLC HRB TBR	8458	- MARGARETA WATERMAN ALT CLC HRB OLG REC RNG TBR WLD WRA
10468	ANDROMEDA WARNER ALT CLC TBR WRA	6075	- WATERS CLC ECN
5707	- DAVID WARNER ALT CLC HRB OLG REC RNG TBR WLD WRA	7555	- JW WATERS ALT CLC ECN OLG RNG TBR VIS WRA
6106	DEAN WARNER ALT CLC TBR WRA	5445	- JOHN & DELAINE WATKINS CLC H2O HRB REC TBR VIS
2493	MIKE WARNER CLC OLG RNG TBR WLD WRA	3446	- (FAMILY) WATSON CLC
4634	RUTH & GEORGE WARNER CLC TBR	6853	- ANNA WATSON CLC TBR
6560	- VICKIE WARNER-HUGGINS CLC GEN TBR TRL	5576	- CLAUDIA WATSON ALT CLC ECN OLG RNG TBR VIS WRA
2535	- ANITA WARREN ALT CLC H2O HRB REC	492	- DEBORAH T. WATSON ALT CLC HRB WRA
4905	CONNIE WARREN ALT CLC ECN OLG RNG TBR VIS WRA	9368	- GAIL WATSON ALT CLC OLG RDSTBR
2518	DANA T WARREN ALT CLC HRB OLG TBR WLD WRA	12166	- GAIL WATSON CLC HRB OLG RDSTBR
2308	ESTHER N WARREN CLC	5869	- JAMES WATSON ALT CLC HRB OLG REC RNG TBR WLD WRA
4906	FRANK WARREN ALT CLC ECN OLG RNG TBR VIS WRA	7230	- KIM WATSON ALT CLC DRT HRB OLG RDS RNG TBR WIN WLD
1574	- JANE WARREN ALT CLC ECN REC TBR VIS WRA	8781	- PATRICIA WATSON ALT CLC ECN OLG RNG TBR VIS WRA
6059	- KATHIE WARREN ALT CLC HRB OLG REC RNG TBR WLD WRA	2181	- PENNY WATSON CLC ECN TBR
10789	M WARREN ALT CLC TBR WRA	10521	- ROBBIE WATSON CLC GEN HRB TBR
10625	RANDY & SUSAN WARREN CLC H2O HRB REC TBR VIS	11014	- STEVE WATSON ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
11147	RAY WARREN RDS REC TRL	5998	- CHARLES J. WATT ALT CLC HRB OLG REC RNG TBR WLD WRA
7334	ROBERT E WARREN ALT CLC TBR WRA	978	- MIKE W WATTS TBR
7228	RONALD WARREN ALT CLC HRB OLG REC RNG TBR WLD WRA	10528	- RHONDA WATTS CLC GEN HRB TBR
8512	STEWART T WARREN ALT CLC FSH OLG TBR VIS WRA	332	- MR & MRS CLIFFORD WAUTERS, M D CLC OLG RDSTBR WRA
2922	TOM WARREN ECN ECN FSH LD	8720	- DANIEL E WAX CLC HRB TBR
2518	A WARENECEYIA ALT CLC HRB OLG REC RNG TBR WLD WRA	3551	- JOHN & A WAY & HUGHES ALT CLC OLG RDS
8771	LELA M WARRICK ALT CLC HRB OLG REC RNG TBR WLD WRA	1041	- M M WAYBUR ALT GEN RNG
1230	- ALAN WASCHEUSKI ALT CLC H2O HRB OLG TBR TRL WRA	6826	- SUSE WAYNE CLC
1244	ALAN WASCHEUSKI CLC OLG	8427	- KENNETH & LYNNE WEAKLEY CLC
5823	ALAN WASCHEUSKI ALT CLC HRB OLG REC RNG TBR WLD WRA	5884	- JAN WEAR ALT CLC HRB OLG REC RNG TBR WLD WRA
1243	GERI WASCHEUSKI CLC HRB	8790	- DEBBIE WEATHERFORD ALT CLC ECN OLG RNG TBR VIS WRA
5824	GERI WASCHEUSKI ALT CLC HRB OLG REC RNG TBR WLD WRA	4428	- MRS ORAN WEATHERSON GEN TBR
7041	KELLY WASER ALT CLC TBR WRA	782	- ORAN WEATHERSON TBR WRA
6084	C WASFIELD ALT CLC ECN OLG RNG TBR VIS WRA	1602	- PERRY A WEATHERSON ECN GEN RDS REC TBR WRA
4062	WASHINGTON LOGGING EQUIPMENT INC GARTH JACKSON ALT GEN TBR	3069	- VICTOR WEATHERSON ALT ECN GEN TBR
5108	CAPRILLA WASHBURN ALT CLC HRB OLG REC RNG TBR WLD WRA	793	- RICHARD C. WEATHERSON OWL TBR
6701	CHARLES WASHBURN ALT ECN FSH GEN HRB OLG RNA RNG TBR WRA WSR	115	- BRENT WEAVER REC TBR WRA
		308	- BRENT WEAVER CLC OLG RDS RNG TBR WIN WRA
		1901	- BRENT WEAVER ALT RDS
		2127	- BRENT WEAVER CLC RDS
		2316	- BRENT WEAVER ALT OLG TBR
		2397	- BRENT WEAVER REC WIN WLD

2741	- BRENT WEAVER H20 PLN	11903	- KARL WEEMS CLC TER WSR
2837	- BRENT WEAVER REC RNG SNP TRL	4092	- WEGERS SERVICE CNTR CLC ECN HRE RDS
3073	- BRENT WEAVER REC RNG TBR		
5496	- BRENT WEAVER ALT CLC HRE OLG REC RNG TBR WLD WRA	10815	- GRANT WEHR ALT TBR
		11752	- GRANT WEHR ALTTBR
8271	- BRENT WEAVER ALT CLC ECN H20 OLG RDS RNG TBR TRL VIS WINWRA	20499	- W JOE WEICH CLCHRB
		4158	- LYNN WILLERTON WEIDENKELLER CLC ECN GEN HRB TBR WRA
7360	- DANIEL WEAVER CLC OLG TER WRA		
7442	- DIANE WEAVER ALT CLC HRB OLG REC RNG TBR WLD WRA	5937	- CHARLES W WEIDERHOLD ALT CLC ECN OLG RNG TER VIS WRA
2475	- JOAN D WEAVER ALT CLC GEN HRE OLG TER WLD WRA	11902	- DAVID WEIDLING CLC FSH HRE RDS TRL WRA
1115	- LAURA E WEAVER ALT CLC HRB TER WRA	5521	- LOREN WEIDMAN ALT CLC TBR WRA
		6853	- MARY WEIN CLC TER
1427	- MILDRED WEAVER CLC GEN TBR WLD	11535	- MICHAEL WEINER HRETBR WRA
2674	- RON WEAVER GEN	10043	- ANDREA WEIR CLC GEN HRE TBR
5099	- D L WEBB ALT CLC HRE OLG REC RNG TBR WLD WRA	448	- FRAN WEIR CLC
		7356	- MICHAEL WEIRBERG CLC OLG TER WRA
10935	- DEBORAH E WEBB CLC	1348	- DEEY WEISHEIMER CLC ECN GEN HRB
6390	- HOWARD WEBB ALT CLC ECN OLG RNG TER VIS WRA	1432	- SIDNEY M & WILLIAM WEISHEIMER ALT CLC HRE RDS REC
			- ED WEISS TER
5183	- JEAN WEEB ALT CLC ECN OLG RNG TBR VIS WRA	469	- ED WEISS CLC TER
		3188	- SANDY WEISS CLC HRB TER WLD
3202	- JOHN R WEBB ALT CLC HRE OLG TER WLD WRA	1122	- MURIEL WEISSEERG ALT CLC HRE RDS TER
		212	
5768	- JOHN R WEBB ALT CLC HRE OLG REC RNG TBR WLD WRA	4225	- JOHN WEIZENBERG ALT CLC ECN OLG RNG TBR VIS WRA
5261	- JOSEPHINE WEBB ALT CLC ECN OLG RNG TER VIS WRA	7133	- EDWIN WELBORN ALT CLC HRE OLG REC RNG TER WLD WRA
			- MR & MRS G H WELBOURN HRB
11215	- LORAIN WEBB CLC ECN RDSTER WRA	11172	- GENE WELCH CLC ECN TBR
4019	- LORRAINE WEBB CLC ECN HRB OLG REC TER VIS WRA	2340	- HAZEL WELCH ALT CLC GEN HRE OLG TER WLD WRA
		3177	- IRENE WELCH CLC
3500	- M & EVELYN WEBB CLCTBR	9223	- PATRICK M WELCH ECN GEN OLG TER
2941	- PATTI R WEBB CLC HRE TER TRL	619	- RAYMONDA WELCH ECN GENTER
4903	- S ANN WEBB ALT CLC ECN OLG RNG TER VIS WRA	2313	- TERRY L WELCH LND
		1783	- KEVIN WELF CLC HRE RDS
1742	- SOLEIL WEBB CLC ECN HRE TBR VIS WRA	1639	- ANN WELLHAUSE ALT CLC HRB OLG REC RNG TER WLD WRA
		4919	- GRACIELE WELLHOUS ALT CLC HRB OLG REC RNG TBR WLD WRA
10611	- WANDA S WEBB CLC H20 HRE RECTBR VIS	6536	- JAMES L WELLHOUSE ALT CLC HRE OLG REC RNG TER WLD WRA
		6533	- WILLIAM T WELLINGTON ALT CLC HRE OLG TER VIS WLD WRA
9386	- A WEEBER ALT CLC TBR WRA	6535	- LORI WEEER CLC HRE TBR
3698	- JENNIFER WEBBER ALT CLC HRE OLG TBR WLD WRA	9829	- LORI WEEER PLN TER
		7629	- VIVIAN WEEER ALT CLC ECN HRE OLG REC RNG TBR WLD WRA
4552	- JUDY WEBBER CLC HRB REC WRA		
7526	- LOIS WEBBER ALT CLC HRB OLG F RNG TBR WLD WRA	7184	- MARY WEBER ALT CLC HRE OLG REC RNG TBR VIS WLD WRA
		8714	- NEWTON WEBER CLC VIS
549	- LORI WEEER CLC HRE TBR	6118	- STEVEN C WEBER ALT CLC HRE OLG REC RNG TER WLD WRA
951	- LORI WEEER PLN TER	69	- TEMRA WEBER-FIELDS CLC WLD
6988	- VIVIAN WEEER ALT CLC ECN HRE OLG REC RNG TBR WLD WRA	5152	- LUCILLE WEESTER CLC REC
			- MARY BETH WEESTER ALT CLC DRT HRB OLG TBR WLD WRA
6825	- MARY WEBER ALT CLC HRE OLG REC RNG TBR VIS WLD WRA	487	- JAMES WEDELL ALT CLC TBR WRA
		299	- JEFF WEDGE ALT CLC HRB OLG REC RNG TER WLD WRA
4457	- NEWTON WEBER CLC VIS	8899	- DAVE WEDLING ALT CLC TBR WRA
7517	- STEVEN C WEBER ALT CLC HRE OLG REC RNG TER WLD WRA		
6078	- TEMRA WEBER-FIELDS CLC WLD	9611	- JOHN WEED CLC HRB
1802	- LUCILLE WEESTER CLC REC	570	- SALLY WEED CLC HRE TER
3780	- MARY BETH WEESTER ALT CLC DRT HRB OLG TBR WLD WRA	3340	- ROBERT A WEEKS ALT CLC HRE OLG REC TBR VIS WLD WRA
		3585	
7015	- JAMES WEDELL ALT CLC TBR WRA		
6648	- JEFF WEDGE ALT CLC HRB OLG REC RNG TER WLD WRA		
10259	- DAVE WEDLING ALT CLC TBR WRA		
3150	- JOHN WEED CLC HRB		
4312	- SALLY WEED CLC HRE TER		
8866	- ROBERT A WEEKS ALT CLC HRE OLG REC TBR VIS WLD WRA		
			- KATH WELLINGTON CLC ECN HRB OLG REC TER VIS WRA
			- E WE AL CLC TBR WRA
			- D CLC HRB RNG TBR WRA
			- D ALT CLC ECN OLG RNG TBR VIS WRA
			- E K WELLNER ATT-AT-LAW ECN HRE
			- JIMMY D WELLOR ECN
			- BONNIE WELLS ALT CLC ECN HRB OLG RNG TBR VIS WRA
			- DONNA S WELLS ALT CLC TBR WRA
			- ELLEN WELLS ECN HRB REC TBR
			- JEFF WELLS CLC HRB TBR
			- JEFF WELLS ALT CLC HRE OLG REC RNG TER WLD WRA

7269	- MIRIAM WELLS' ALT CLC TBR WRA	220	- WESTERN STATES TRAILS ASSN ANTONIO
7893	- MIRIAM WELLS. ALT CLC HRB OLG REC RNG TBR WLD WRA	251	- ROSSMANN GEN HST LND TRL WRA
3271	- PAUL WELLS' CLC ECNTBR	4636	- WESTERN STATES TRAILS ASSN ANTONIO ROSSMANN. HSTTRL WRA
8424	- SUSAN WELLS' ALT CLC ECN HRB TBR	12239	- WESTERN TIMBER ASSN JAMES CRAINE CLC FLE FSH HRB TBR
2153	- VERA WELLS' CLC HRB OLG REC RNG TBR WRA	11126	- WESTERN TIMBER ASSN JAMES R. CRAINE ALT ECN GEN HRB OWL REC RNG TBR VIS WLD
2424	- VERA C WELLS' ALT CLC HRB OLG TBR WLD WRA	6220	- WESTERN TIMBER ASSN JIM CRAINE ECN GEN TBR
10423	- ELLEN WELLS & PAUL HABIB' ALT CLC HRB OLG REC RNG TBR WLD WRA	6620	- WESTERN WOOD PRODUCTS DAN RIDER ALT CLC ECN OLG RNG TBR VIS WRA
8405	- KRISTEN WELLS-BUCK' REC TRL WRA	6526	- WESTERN WOOD PRODUCTS' CLC ECN GEN H2O OWL PLN REC SNP TBR VIS WIN WLD
8788	- CHRISTOPHER WELSH. ALT CLC ECN OLG RNG TBR VIS WRA	4836	- MICHAEL WESTLING' ALT CLC GEN HRB OLG REC RNG TBR WLD WRA
8640	- GREG WELSH' REC WRA	9415	- CHRISTINE WESTLY. ALT CLC ECN OLG RNG TBR VIS WRA
2168	- TAREY W. WELSH' CLC TBR	9701	- CHRISTINE WESTLY' ALT CLC ECN OLG RNG TBR VIS WRA
3641	- MARY J WENDEMUTH. CLC TBR	7182	- DONNA LYNNE WESTMOREN' ALT CLC TBR WRA
5377	- ROSS C WENDT' ALT CLC ECN OLG RNG TBR VIS WRA	11509	- RANDY WESTON' CLC DRT HRB
91	- JANICE WENELL' CLC ECNTBR	1047	- SCOTT WESTON' TBR WRA
9084	- JAN WENNICK' ALT CLC HRB OLG TBR WLD WRA	3150	- DOREY WESTPHAL' CLC HRB
510	- SUSAN WENZLICK. ALT CLC ECN	3150	- PAMELA WESTPHAL' CLC HRB
3249	- SUSAN WENZLICK' ALT CLC ECN HRB OLG REC RNG TBR WLD WRA	2109	- ROSELYN WESTWORTH' CLC ECN HRB REC TBR VIS WRA
3372	- SUSAN WENZLICK' ALT CLC ECN HRB OLG TBR WLD WRA	1545	- WETSEL-OVIATT' LUMBER CO CECIL L WETSEL, JR , ALT
3440	- SUSAN WENZUCK' ALT CLC ECN HRB OLG TBR WLD WRA	135	- JOHN R WETTSTEIN' CLC GEN HRB RDS RNG
3239	- MARY K. WERDER-LEWIS' ALT CLC HRB TBR	10388	- T WETTSTEIN' CLC
3150	- E WERN' CLCHRB	486	- STEPHEN H WETZEL' CLC TBR
913	- BURDELL WERNER. FSH GEN TRL WLD	4853	- REMA WETZELL' ALT CLC FLE HRB OLG TBR WLD WRA
10059	- RICHARD WERNER' ALT CLC ECN OLG RNG TBR VIS WRA	1347	- JEROME WGILYM' CLC FLE GEN HRB
7316	- ROBIN WERNER. ALT CLC HRB OLG REC RNG TBR WLD WRA	8927	- HELENA WHALER-BRIDGE' ALT CLC ECN HRB OLG REC RNG TBR WLD WRA
975	- SCOTT L WERNER' FSH GEN TRL WLD	9920	- CHRIS WHAUN' CLC GEN HRB TBR
408	- ANDY WERTHEIM. FSH REC TRL	10669	- LINDA WHAN' ALT CLC ECN OLG RNG TBR VIS WRA
2227	- LES WERTZ' TBR	3070	- WALT J WHART' GEN
6353	- ELIAS WESLEY' ALT CLC HRB OLG REC RNG TBR WLD WRA	7029	- ELISE B. WHEEKA' ALT CLC TBR W
174	- NEIL WESNER' CLC H2O HRB OLG RNG TBR VIS WIN WRA	2221	- ALICE M WHEELER' DRT ECN FSH H2O HRBOLGRDSRECRNGTBR
7662	- THEA WESSEDNEAH' CLC OLG TBR WLD WRA	11662	- ALICE M WHEELER' CLC H2O HRB REC TBR
3897	- DALE WEST' ECN GEN TBR	8278	- BERT WHEELER' ALT CLC ECN OLG REC RNG TBR VIS WRA
3313	- DR EDWARD WEST. ALT CLC OLG TBR WRA	2890	- BUSTER WHEELER' AIR ALT CLC HRE OLG REC TBR WLD WRA
3849	- EDWARD WEST' ALT CLC OLG TBR WRA	2054	- CHARLES WHEELER' AIR ALT CLC HRB OLG REC TBR WLD
7762	- GARY & MARILYN WEST' CLC ECN GEN OWL RNG TBR WLD	2220	- CHARLES WHEELER. AIR ALT CLC HRB OLG REC TBR WLD WRA
11263	- GENE WEST' CLC GEN TBR	8282	- GALE A WHEELER' ALT CLC ECN OLG REC RNG TBR VIS WRA
2901	- KATE WEST' CLC HRB OLG RDS RNG TBR	4960	- KELLY WHEELER, AIR ALT CLC HRB OLG REC TBR WLD WRA
687	- LONA & LAUREN WEST. H2O TBR VIS WRA	3637	- LEE WHEELER' CLC VIS
6739	- MARY JULIENNE WEST' CLC ECN FLE H2O HRB OLG REC TBR	9447	- LILLIAN WHEELER' ALT CLC ECN OLG RNG TBR VIS WRA
266	- MRS LONA WEST. TBR	7773	- LINDA WHEELER' CLC H2O HRB REC TBR VIS
1586	- RICHARD WEST' TBR WRA		
12038	- RICHARD WEST. ALT TBR		
10927	- SHELLI WEST' CLC TBR		
8497	- STEPHEN WEST' ALT CLC ECN HRB OLG TBR WLD WRA		
5188	- SUSAN WEST' ALT CLC ECN OLG RNG TBR VIS WRA		
5177	- TOM WEST' ALT CLC ECN OLG RNG TBR VIS WRA		
1269	- WESTERN RESOURCES JAY WILCOX' TBR WRA		

6848	MARK W. WHEELER. ALT CLC ECN OLG RNG TER VIS WRA	7804	- JOHN WHITEHEAD ALT CLC TBR WRA
2339	MOLLY WHEELER AIR ALT CLC HRB OLG REC TER WLD WRA	1368	- JON WHITEHILL ALT CLC OLG TER TRL WRA
649	MRS GLENN L WHEELER. CLC FLE TER	2388	- STEPHEN WHITEHORN, RPF OWLTER WRA
7384	ROCHELLE WHEELER CLC OLG REC TBR WIN WRA	679	- WHITEWATER VOYAGES LTD WILLIAM MCGINNIS LND REC WSR
4953	STEVE WHEELER AIR ALT CLC HRE OLG REC TBR WLD WRA	2885	- WHITEWATER VOYAGES LTD WILLIAM MCGINNIS CLC DRT H2O LND REC WSR
9657	BRUCE WHEELLOCK. ALT CLC HRE OLG REC RNG TER WLD WRA	7401	- SHER WHITFIELD ALT CLC HRE OLG REC RNG TER WLD WRA
10562	MICHAEL WHEELER CLC GEN HRB TER	7002	- MARY WHITFIELD ALT CLC TER WRA
4892	DAVID WHETSTONE ALT CLC HRE OLG REC RNG TBR WLD WRA	8507	- STEPHEN WHITLAKES ALT CLC TBR WRA
10446	MARSHALL WHINNERY CLC H2O HRB REC TBR VIS	2041	- MICHAEL T WHITLEMARE ALT ECN GEN
6067	BARBARA WHIPPERMONS' ALT GLC HRE OLG TER WLD WRA	4235	- MIKE & USA WHITLET ALT CLC HRB RDS
8344	EDWARD D WHISLER ALT CLC HRE OLG TER WLD WRA	50	- DANIEL WHITLEY CLC GEN REC VIS
9002	DAVID WHITACO ALT CLC HRE OLG REC RNG TER WLD WRA	1304	- ELIZABETH WHITMAN ALT CLC TER
2148	ALAYNA WHITE CLC DRT HRE TER	1948	- GEORGE WHINEY HRB REC
20511	BARBARA S WHITE GEN TRL	1966	- J WHITNEY' ALT CLC
2974	ERENDAN WHITE ALT CLC HRE OLG TER WLD WRA	9946	- DANICE WHITTAKER' CLC GEN HRETBR
5336	CHRIS WHITE. ALT CLC HRB OLG REC RNG TBR WLD WRA	4534	- DONNA WHITIAKER. ALT CLC HRB OLG REC RNG TER WLD WRA
9146	CLAUDE WHITE ALT CLC ECN OLG RNG TBR VIS WRA	6066	- ANN WHITTED CLC RDS TER
9794	DANIELLE WHITE ALT CLC TER WRA	71	- ALAN WHITTEN' CLC ECN HRE RNG TER WRA
262	DAVID U & CAROL WHITE CLC	2521	- JANE WHITTEN CLC TBR
4037	GEORGE WHITE GEN	2615	- JAN WHITTINGTON CLC GEN OLG TER VIS WRA
5423	J H WHITE CLC	802	- WALT W WHITLESAY. TER
450	JERRY WHITE GEN TER	803	- KATHLEEN WHITTLESEY TER
2686	JERRY WHITE GEN	565	- WAYNE WHITTLESEY CLC GEN HRB TER
11267	JERRY WHITE. GEN TER	48w	- JEREMIAH WHOOLEY ALT CLC ECN OLG RNG TER VIS WRA
3276	JIM WHITE FSHTER	8000	- JEREMIAH K. WHOOLEY. ECN REC RNG TER VIS
434	KAREN L WHITE ALT CLC HRB	3191	- M WHOOLEY CLC
9559	KATHERINE L WHITE CLC H2O HRE REC TER VIS	11229	- STEVE WIARD CLC ECN HRB TER
5856	KIMBERLY WHITE. ALT CLC HRB OLG REC RNG TBR WLD WRA	3639	- JOHN WIBBERLY ALT CLC FSH HRB OLG TER TRL WLD WRA
7912	LESTER O WHITE ALT TBR	5053	- TERESA WIBBERLY ALT CLC ECN OLG RNG TER VIS WRA
741	MABEL L WHITE ECN TER VIS	6784	- JEFF WIDEN. ALT CLC GEN HRE OLG REC RNG TER WLD WRA
6901	MARGARET F WHITE ALT CLC ECN OLG RNG TER VIS WRA	10811	- LESLIE WIDERBOLT' CLC OLG TBR WRA
7108	MELISSA WHITE ALT CLC ECN OLG RNG TER VIS WRA	3015	- LESLIE WIEDMAN CLC HRB OLG RDS TER
7006	MICHAEL C WHITE. ALT CLC TBR WRA	9266	- SHANNON WIEM. CLC HRB
9145	M. LDRED WHITE CLC ECN TBR VIS	2056	- KEN WIENKE OLG TER
4032	MR & MRS JAMES WHITE GEN OLG TER	5735	- KAREN WIESE ALT CLC HRE OLG RDS REC TBR TRL WIN
9155	PEGGY WHITE ALT CLC ECN OLG RNG TER VIS WRA	7246	- JEFF WILBANKS. ALT CLC ECN OLG RNG TER VIS WRA
433	R KENT WHITE ALT CLC FLE HRE REC TBR	6124	- LINDA WILBURN CLC ECN TER
3756	ROBIN WHITE ALT CLC HRE OLG REC RNG TER WLD WRA	11871	- LINDA WILBURN CLC ECN TER
2303	ROLLAND K. WHITE ALT CLC HRE OLG TER WLD WRA	6476	- ANN WILCOX ALT CLC HRB OLG TER WLD WRA
3787	SARAH WHITE ALT CLC HRB OLG REC RNG TER WLD WRA	9933	- KELI WILCOX CLC GEN HRE TER
11160	SHIRLY M WHITE CLC REC	5795	- CATHY WILCOX-BARNES. ALT CLC HRE OLG REC RNG TBR WLD WRA
5568	SONJA WHITE ALT CLC HRB OLG REC RNG TER WLD WRA	3532	- C WILCOXEN, JR CLC ECN REC TBR
7963	STEVEN WHITE ALT CLC TER WRA	6959	- AMILIA WILDER ALT CLC HRE OLG REC RNG TER WLD WRA
606	VONDA L WHITE TER	10474	- ART WILDER ALT CLC TER WRA
8449	GARY C WHITE, O D ALT CLC HRB OLG TER WLD WRA	7668	- CAROL WILDER. ALT CLC TER WRA
		8408	- WILDLANDS RESEARCH MARCENE & CRANDALL BAY CLC H2O REC RNG TER WLD WRA
		1672	- WILDLIFE CONSERVANCY SHARON NEGRI CLC ECN LND RDS RNG TER

10187	- RUTHWILFONG CLC	1116	- FRANCES P. WILLIAMS ALT CLC
7074	- C. WILHELM ALT CLC ECN OLG RNG TBR VIS WRA	854	- HENRIETTA WILLIAMS ECNTBR WRA
		12061	- HENRIETTA WILLIAMS TBR
7080	- ERIC WILHELM ALT CLC ECN OLG REC RNG TBR VIS WRA	2296	- J WILLIAMS' TRL
		7095	- JAMES WILLIAMS. ALT CLC ECN OLG REC RNG TBR VIS WRA
11303	- JANUS WILHELM: CLC HRB		- JAMES S WILLIAMS ALT CLC GEN HRB OLG REC RNG TBR WLD WRA
5986	- JESSICA WILHELM. ALT CLC HRB OLG REC RNG TBR WLD WRA	2670	- JUDY WILLIAMS CLC FLE TBR
9753	- MICHAEL WILKER ALT CLC TBR WRA	2911	- KATHLEEN WILLIAMS CLC
818	- BRIAN WILKERSON ECNTBR	4630	- KENNARD L WILLIAMS. ECN GEN RNG TBR
3612	- JOHN W WILKERSON. TBR	1261	
3098	- MR & MRS WILKERSON. ALT ECN GEN		- LANDON R WILLIAMS ALT CLC ECN HRB OLG RNG TBR VIS WRA
1423	- LARRY W WILKIE. ECNTBR	5905	- LEESA WILLIAMS. ALT CLC ECN OLG RNG TBR VIS WRA
311	- STEPHEN C WILKIE' CLC HRB	8768	- LEONARD WILLIAMS TBR
6224	- ROGER WILKINSON. ALT CLC ECN OLG RNG TBR VIS WRA	766	- LESLIE ANNE WILLIAMS. CLC FSH HRB
781	- TIM WILKINSON REC TBR WLD	9529	- LORRAINE WILLIAMS. ALT CLC ECN OLG RNG TBR VIS WRA
6359	- JASON WILKISON. ALT CLC HRB OLG REC RNG TBR WLD WRA	9433	- MARGERY WILLIAMS GEN RNG WRA
		298	- MARGERY WILLIAMS ALT CLC ECN HRB OLG TBR WLD WRA
3960	- BARBARA WILL' ALT CLC GEN HRB TBR	4417	- MAXINE WILLIAMS ECN TBR WRA
10391	- SYD WILLARD CLC DRT ECN FSH GEN H2O HRB LND RDS REC RNA RNG SIA TBR TRL WIN WLD WRA WSR	518	- MICAH WILLIAMS CLC
		4708	- MIKE WILLIAMS ALT CLC HRB OLG REC RNG TBR WLD WRA
11271	- SYD WILLARD, CLC ECN LND REC RNG WSR	6249	- PATRICIA WILLIAMS CLC TBR
190	- DWIGHT M WILLARD, ATT-AT-LAW' ALT WRA	3500	- R TIMOTHY WILLIAMS. TBR
331	- DWIGHT M. WILLARD, ATT-AT-LAW ECN OLG REC TBR WRA	1465	- RACHEL WILLIAMS TBR WRA
7380	- AMY M WILLATS CLC OLG REC TBR TRL WRA	856	- RACHEL WILLIAMS ALT CLC HRB OLG REC RNG TBR WLD WRA
		3589	- RACHEL WILLIAMS ECN
3485	- GARY & BETSY WILL CUTS; REC	12062	- ROBERT WILLIAMS' ALT CLC HRB OLG REC RNG TBR WLD WRA
7642	- MARY L WILLES ALT CLC TBR WRA	7727	- SAMMY D WILLIAMS TBR
7319	- MARK WILLETT' ALT CLC TBR WRA		- THOMAS C. WILLIAMS ECN TBR
2392	- STEVEN M WILLET. REC TBR WLD	1382	- VALERIE WILLIAMS ALT CLC HRB OLG TBR WLD WRA
3642	- JOHN N WILLN: ALT CLC HRB OLG TBR WLD WRA	1668	- VIC WILLIAMS RNG TBR
		4483	- WAYNE WILLIAMS ECN TBR WRA
11075	- BOB WILLHITE, ECN TBR	1968	- GENEVA E WILLIAMS1' CLC H2O HRB REC TBR VIS
1260	- BARBARA WILLIAMS RNG TBR	520	- JEFF WILLIAMSON ALT CLC HRB OLG REC RNG TBR WLD WRA
9437	- C I WILLIAMS ALT CLC ECN OLG RNG TBR VIS WRA	9564	- MAX WILLIAMSON ALT CLC ECN HRB LND TBR
20	- CARLA R WILLIAMS. CLC HRB	4810	- CINDY WILLIS ALT CLC TBR
1770	- CARLA R WILLIAMS. CLC HRB TBR TRL		- JACKYE WILLIS ALT CLC ECN OLG RNG TBR VIS WRA
2275	- CARLA R WILLIAMS ALT CLC FLE HRB OLG RDS RNG WRA	11223	- MARK WILLIS' ALT CLC ECN OLG RNG TBR VIS WRA
12122	- CARLA R WILLIAMS ALT CLC HRB OLG TBR WRA	1286	- NANCY A WILLIS. ALT CLC H2O HRB OLG RDS REC RNG TBR WRA
194	- CHARLES C WILLIAMS CLC HRB RDS TBR WRA	6370	- SHARNI M WILLOCHES' ALT CLC ECN OLG RNG TBR VIS WRA
9432	- CLEB WILLIAMS ALT CLC ECN OLG RNG TBR VIS WRA	5162	- SHARON M. WILLOCKS ALT CLC ECN OLG RNG TBR VIS WRA
8565	- COHIN WILLIAMS CLC OLG TBR WRA	6253	- KRISTIN WILLOUGHBY ALT CLC HRB OLG TBR WLD WRA
2677	- COURTNEY WILLIAMS. CLC HRB TBR	6484	- O WILLOUGHBY ALT CLC TBR WRA
9157	- DALE WILLIAMS ALT CLC ECN OLG RNG TBR VIS WRA	9452	- DAVID WILLS ALT ECN GEN
11906	- DANNY WILLIAMS CLC DRT ECN TBR	2595	- LAURA WILLS CLC ECN
10003	- DARCI E WILLIAMS. CLC GEN HRB TBR	8056	- STEVEN WILLS CLC GEN HRB TBR
3732	- DEBBIE WILLIAMS ALT CLC HRB OLG TBR WLD WRA	2014	- ALAN & DOROTHY WILMUNDER AIR CLC ECN H2O TBR VIS
9436	- DEBBIE WILLIAMS ALT CLC ECN OLG RNG TBR VIS WRA	8805	
4956	- DON & ETHEL WILLIAMS CLC H2O OLG REC TBR WLD	9952	
6367	- EVELYN WILLIAMS ALT CLC HRB OLG REC RNG TBR WLD WRA	8710	

2390	ALLEN D. WILSON CLC TBR	4279	- WILLIAM WINDES' GEN TBR
10720	ANIE WILSON ALT CLC TBR WRA	6663	- GAIL WINETH ALT CLC ECN OLG RNG TBR VIS WRA
9317	BARBARA WILSON CLC H2O HRB REC TBR VIS	2201	- THOMAS WINETT CLC
1416	BRYAN J WILSON ALT ECN H2O TBR	7208	- PAT WING ALT CLC ECN OLG RNG TBR VIS WRA
7429	CYNTHIA C WILSON ALT CLC HRB OLG REC RNG TBR WLD WRA	2385	- WING INDUSTRIES INC S T PEADEN ECN TBR
1337	DAN WILSON CLC ECN HRB RDS RNG TBR	5268	- ADELE WINIECK ALT CLC ECN OLG RNG TBR VIS WRA
1309	DARLENE WILSON ALT CLC ECN HRB OLG REC TBR VIS WLD	7879	- CAROL WININGHAM ALT CLC HRB OLG REC RNG TBR WLD WRA
3419	DENISE WILSON CLC TBR	9823	- NAOMI WINIWARTZ CLC GEN OLG TBR WRA
6069	E WILSON REC	10740	- HEATHER WINKELMANN CLC OLG TBR WRA
8708	EILEEN WILSON TBR	7144	- ROY & NANCY WINKLES, JR ALT CLC ECN OLG RNG TBR VIS WRA
10430	ELEANOR WILSON CLC H2O HRB REC TBR VIS	4764	- AMOS WINN CLC OLG TBR WRA
6742	EVA WILSON CLC OLG WRA	1035	- MATT WINN CLC TBR
11260	FOSTEN WILSON CLC ECN H2O HRB RNG TBR	8666	- MATT WINN CLC ECN TBR VIS
6813	FOSTER WILSON ALT CLC FSH H2O HRB LND RDS REC RNG TBR TRL VIS WLD WRA	2.57	- KARL F. WINNEKER' ALT CLC H2O HRB OLG REC TBR TRL WLD WRA
11171	J.S. WILSON ALT CLC HRB	4669	- ANN WINSHEP ALT CLC TBR WRA
2558	JACK WILSON' ECN TBR	1280	- S. DAVIS WINSHIP, ALT CLC
2559	JAMES WILSON TBR	1446	- MICHELLE WINSLOW RDSTBR
4164	JAMES WILSON ALT CLC HRB OLG TBR WLD WRA	11050	- VERLA WINSLOW, ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA
1458	JAMES R. WILSON, ECN REC TBR	5193	- CARROL WINTER' ALT CLC HRB OLG REC RNG TBR WLD WRA
10412	JAMIE WILSON ALT CLC TBR TRL WRA	12227	- MARGERY WINTER CLC ECN TBR
5429	JEANNE L WILSON CLC H2O HRB REC TBR VIS	3523	- MRS AUGUST WINTER CLC TBR WRA
1969	JINNY WILSON CLC DRT HRB REC	8820	- THOMAS WINTER CLC GEN TBR
2557	JOAN WILSON ECN TBR	6836	- DEBBIE WINTERS CLC ECN REC
8725	JOYCE WILSON ALT CLC OLG RDS TBR	3355	- LORRAINE WINTERS, CLC WRA
11824	KATHY WILSON, CLC	1900	- WISCONSIN-CA FOREST PRODUCTS DALE HOUSTON ECN TBR
7505	KERSTLIN WILSON ALT CLC HRB OLG REC RNG TBR WLD WRA	8576	- ADAM WISE CLC ECN HRB TBR VIS WRA
3507	KIM WILSON ALT F VIS	10455	- DOUGLAS P WISE ALT CLC TBR WRA
7042	ANN WILSON ALT CLC TBR WRA	7786	- GENE & SHIRLEY WISE CLC H2O HRB REC TBR VIS
5690	USA C WILSON ALT CLC HRB OLG REC RNG TBR WLD WRA	20021	- CLYDE WISE, JR' RNG TBR WLD WRA
2268	LOIS WILSON' CLC	7066	- MARVIN WISELEY, ALT CLC HRB OLG REC RNG TBR WLD WRA
4920	LORRAINE WILSON' ALT CLC HRB OLG REC RNG TBR WLD WRA	1782	- HELENE J WISEMAN CLC HRB REC WRA
1325	LOUISA WILSON TBR	6853	- MARIAN WISHART, CLC TBR
3060	MARK WILSON TBR	9532	- JODI WISNESS, CLC HRB TBR
11741	MARK N WILSON ALT ECN TBR	4418	- EMSE WITAR CLC HRB TBR
1552	MARTINK, WILSON ECN REC TBR	677	- ALAN WITER' TBR
6719	MAUREEN KELLY WILSON ALT CLC HRB OLG TBR WLD WRA	889	- CORRINE WITT, TBR
4707	MELISSA WILSON CLC TBR	6043	- K.D WITT; ALT CLC ECN OLG RNG TBR VIS WRA
680	MR & MRS. JOHN F WILSON ALT CLC HRB RDS TBR	890	- SARA WITT' TBR
3993	MR. & MRS. WAYNE WILSON, CLC	6044	- WENDELL WITT ALT CLC ECN OLG RNG TBR VIS WRA
2437	NORMAN C WILSON' ECN TBR	10639	- ANNA J WITTICH CLC H2O HRB REC TBR VIS
181	OLIVE & WARREN WILSON CLC HRB RDS	11671	- SARAH WOERNER, M D CLC
4568	PATRINA WILSON CLC	76	- CASSANDRA WOHLSTROM NOACK CLC HRB OLG RDS TBR VIS WLD WRA
4169	ROSA WILSON ALT CLC HRB OLG TBR WLD WRA	8175	- JASON WOID ALT CLC HRB OLG REC RNG TBR WLD WRA
8413	SHELLEY WILSON CLC HRB OLG RNG TBR TRL WLD WRA	195	- N WOIFF TBR WSR
1175	SUSANNA WILSON, CLC	8132	- GERTRUDE WOLDT CLC
443	VICKIE WILSON CLC	10744	- CAROLE WOLEN ALT CLC TBR WRA
2920	WILMA WILSON CLC TBR VIS	3610	- CHARLES WOLF TBR WRA
11035	CHENANNE WILSON ALT CLC ECN FSH H2O HRB SNP TBR TRL WLD WRA	6276	- KEVIN WOLF ALT CLC TBR WRA
2821	TOM WILSON TBR WRA	9376	- LESTER WOLF ALT CLC TBR WRA
10277	PATTI L WILY ALT CLC ECN TBR WRA		
1619	ROBERT J WINCHELL & THOMAS KOCH ECN TBR		

8476	- MARILYNN D. WOLF. CLC ECN	9341	/ OODALL CLC HRB TBR
3609	- MARY WOLF. TBR WRA	7777	- C C WOODALL. CLC HRB TBR
2936	- GREGORY WOLFE CLC	1910	CARLTON WOODARD E
6967	- GREGORY WOLFE ALT CLC HRB OLG	4729	DENNIS WOODARD. CLC HRB TBR
	REC RNG TBR WLD WRA	4018	ROSS WOODBURY CLC
3150	- JEFF WOLFE CLC HRB	5161	SCOTT WOODGEF. T. ECN OLG
3405	- LWOLFE CLC		RNG TBR VIS WRA
10748	- BEN WOLFF. ALT CLC TBR WRA	235	CHRIS WOODLING. TBR WLD
6138	- HAL WOLFF. ALT CLC TBR WRA	1429	- E B W JODMANSEE. CLC REC TBR
407	- LONNIE WOLFF. ALT CLC TBR WRA	8328	↓ OODRIFF. ALT CLC HRB OLG REC
345	- NORM WOLFF. CLC WRA		RNG TBR WLD WRA
576	- NORM WOLFF. WSR	1050	DOUGLAS WOODROW. CLC HRB RNG TBR
439	- SARA WOLFF. ALT CLC HRB REC TBR		WRA
1588	- JAMES L WOLFORD. CLC ECN HRB RDS	1634	- AYN WOODRUSS. CLC GEN TBR
	TBR WRA	10878	- DENISE WOODS. CLC FLE HRB TBR
		10864	- J R WOODS. CLC
5281	- ANITA WOLFSON. ALT CLC HRB OLG REC	6398	SANDRA WOODS. ALT CLC HRB OLG REC
	RNG TBR WLD WRA		RNG TBR WLD WRA
10985	- ANITA WOLFSON. ALT CLC ECN FSH H2O	6520	STEVEN L WOODS. ALT CLC DRT HRB
	HRB SNP TBR TRL WLD WRA		OLG REC RNG TBR WLD WRA
10369	- OTIS WOLLAN. ALT CLC DRT ECN HRB	3591	SARA WOODSMITH. ALT CLC HRB OLG
	OLG PLN REC SIA TBR VIS WRA		REC RNG TBR WLD WRA
10374	- P WOLLAN. CLC HRB RDS RNG VIS WSR	1876	STEVE WOODWARD & JANET L REZOS
11725	- STEPHEN WOLTERS. CLC		CLC REC TBR TRL
1209	- SUSAN WONDERGEM. CLC HRB OLG OWL	2748	PATRICK WOODWORTH. CLC TBR WRA
	RDS REC RNG TBR VIS WIN WLD WRA	9664	- MR & MRS. WOODYARD. ALT CLC HRB
			OLG REC RNG TBR WLD WRA
2100	- CHARLENE B WONDRA. CLC H2O HRB	1813	- LOUISE WOOLEY. CLC GEN HRB RDS TBR
	TBR WRA		TRL VIS
2097	- TERRY WONDRA. CLC H2O HRB WLD WRA	11852	- NARLEEN & DON WOOLHETHER. CLC HRB
5308	- RICK WONEBERGEM. ALT CLC HRB OLG		TBR
	REC RNG TBR WLD WRA	5131	- NECOLE WOOLHETHER. ALT CLC HRB
8996	- CINDY WONG. ALT RNG WRA		OLG REC RNG TBR WLD WRA
4358	- DUNCANTAYLOR WONG. ALT CLC HRB	10431	ERMA WOPPLEN. CLC H2O HRB REC TBR
	OLG REC RNG TBR WLD WRA		VIS
2775	- KIT M. WONG. ALT CLC HRB OLG TBR	6154	CHRIS WORCESTER. CLC ECN HRB TBR
	WLD WRA		WLD WRA
9255	- NATALIE WONG. CLC HRB TBR	11286	DAN WORDEN. ALT LND
1333	- PHYLLIS WONG. ALT CLC HRB	1720	DANIEL WORDEN. CLC ECN HRB TBR VIS
1785	- CHRISTINE WONTUHALTER. CLC		WRA
8682	- ALLEN D WOOD. ALT CLC ECN OLG RNG	1476	KEVIN F WORDEN. CLC TBR
	TBR VIS WRA	20501	MARCIA WORDEN. GEN TRL
4379	- CHRIS WOOD. ALT CLC HRB OLG TBR	534	MARK F. WORDEN. CLC HRB TBR
	WLD WRA	1495	PETER R & MAUREEN WORDEN. CLC HRB
11516	- DONALD C WOOD. ECN GEN TBR		REC TBR VIS
1419	- GEORGE L WOOD. ECN	1146	- TIMOTHY J. WORDEN. CLC GEN HRB REC
5072	- GINNEY WOOD. ALT CLC ECN OLG RNG		TBR WRA
	TBR VIS WRA	10397	- STERLING WORR-PREYER. REC
8854	- JAMES & GLADYS WOOD. CLC H2O HRB	11295	ELIZABETH WORM. ALT CLC ECN HRB
	REC TBR VIS		TBR
5600	- JOHN WOOD. ALT CLC HRB OLG REC	3611	LES WORTHINGTON. REC TBR WLD WRA
	RNG TBR WLD WRA	7177	- STEPHEN J WRAITH. ALT CLC TBR WRA
7214	- JOHN WOOD. ALT CLC HRB OLG REC	564	LAWRENCE WREAD. ALT CLC FLE HRB
	RNG TBR WLD WRA		REC TBR WLD
3147	- JULIA C. WOOD. ALT CLC H2O OLG REC	4725	BILLY WRIGHT. CLC
	TBR TRL WLD	5896	CAROLYN WRIGHT. ALT CLC ECN OLG
3301	- LEA WOOD. CLC ECN HRB REC VIS		RNG TBR VIS WRA
4395	- MICHELE WOOD. PLN TBR	11509	CRAIG WRIGHT. CLC DRT HRB
2576	- RAYMOND T WOOD. CLC OLG TBR WRA	1401	- DILLARD F WRIGHT. ECN TBR
5057	- RICHARD E WOOD. ALT CLC ECN OLG	1448	DILLARD F WRIGHT. ECN REC TBR
	RNG TBR VIS WRA	10908	DONNA WRIGHT. CLC GEN TBR TRL
10006	- ROBERT WOOD. CLC GEN HRB TBR	5900	DUFFY WRIGHT. ALT CLC ECN OLG RDS
4831	- RON WOOD. ALT CLC ECN OLG RNG TBR		RNG TBR VIS WRA
	VIS WRA	1033	- FLORENCE WRIGHT. ECN
3400	- STEVAN & MARGARET WOOD. CLC TBR	6314	GERALD & NANCY WRIGHT. ALT GEN REC
3567	- SYLVIA M WOOD. CLC GEN HRB		VIS
2878	- WOOD-PLY FOREST PROD F SOLINSKY.	3772	JERRE WRIGHT. ALT CLC HRB OLG REC
	GEN TBR		RNG TBR WLD WRA

1267	- JOHN V WRIGHT REC WIN	6556	- YMCA-NORTH BAY JOHN E WEEKS CLC
1539	- JONATHAN WRIGHT CLC RDS REC TBR		TRL
	TRL WLD	2616	ROBERTYOCUM TBR
8288	- KATHLEEN WRIGHT ALT CLC ECN HRB	8105	MR & MRS YOKOI CLC HRB TRL
	OLG RNG TBR VIS WRA	6085	CHERY YONG ALT CLC ECN OLG RNG
1589	- KEITH M WRIGHT ECN WLD WRA		TBR VIS WRA
11666	- KEITH M WRIGHT ECN WLD WRA	11152	GLENN'S YOSHIOKA ALT CLC FSH RDS
1185	- LUCILLE WRIGHT CLC RDS WRA		TBR VIS WSR
6892	- MILHOUS WRIGHT ALT CLC ECN OLG	10366	MICHAEL YOST TBR
	RNG TBR VIS WRA	5437	SALLY YOST CLC ECN HRB OLG REC TBR
3500	- RAYMOND A. WRIGHT CLC TBR		WRA
9496	- RICHARDA WRIGHT ALT CLC TBR WRA	10390	WILFRED YOST REC
4757	- TAMI WRIGHT CLC TBR	9975	JANET YOUCHY CLC GEN HRB TBR
10994	- ROBIN WRIGHT ALT CLC ECN FSH H2O	1945	ALEX C YOUNG TBR
	HRB SNP TBR TRL WLD WRA	10807	ANGUS YOUNG ALT CLC ECN OLG RNG
11042	- TROY WRIGHT AL CLC ECN FSH H2O		TBR VIS WRA
	HRB SNP TBR TRL WLD WRA	6801	ANNIE YOUNG ALT CLC HRB OLG TBR
271	- TROY WRIGHT ALT CLC ECN FSH H2O		WLD WRA
2673	- TROY WRIGHT ALT CLC ECN FSH H2O	7082	BOB YOUNG ALT CLC ECN OLG RNG TBR
	HRB REC TBR VIS		VIS WRA
11732	- DAVID T WYATT CLC TBR	9303	D YOUNG' CLC H2O SIA VIS
10637	- KAREN WYATT CLC H2O HRB REC TBR	3985	EDDY YOUNG ALT CLC RNA SIA VIS WRA
	VIS	4962	EDDY YOUNG CLC TRL VIS
279	- MARIAN V WYCKOFF ALT TBR	8403	EDDY YOUNG CLC GEN RDS TRL VIS
1805	- WENDY WYELS CLC	8608	EDDY YOUNG CLC VIS
6751	- BARBARA WYLIE ALT CLC HRB OLG REC	11231	JIM YOUNG ECN REC TBR
	RNG TBR WLD WRA	2288	LANCE YOUNG' CLC RDS TBR WRA
3115	- CAROLYN WYMAN ALT ECN GEN	305	MARGARET A. YOUNG ALT CLC HRB TBR
3121	- FLORENCE WYMAN ALT ECN GEN		WRA
2021	- JULIE WYMAN ALT ECN GEN	4923	TERRY YOUNG' ALT CLC HRB OLG REC
3120	- L WYMAN ALT ECN GEN		RNG TBR WLD WRA
6853	- MARY ANN WYNANT CLC TBR	166	TOM YOUNG CLC HRB TBR WRA
9075	- INGRID WYNE-EVANS ALT CLC TBR WRA	10757	BW YOURD CLC H2O HRB REC TBR VIS
6602	- VALERIE WYNELL ALT CLC HRB OLG REC	4978	ANNABEELE YOUTSLER' CLC ECN FAC
	RNG TBR WLD WRA		HRB MIN PLN RNG TBR VIS
4573	- WINDY WYNN CLC RDS	20500	TED YOZHINN TRL
10524	- CARRIE WYPER CLC GEN HRB TBR	10585	BARBARA YUAI'S CLC FLE HRB OLG RDS
9685	- HALLIE YACKI ALT CLC TBR WRA		TBR
277	- PETEYAMAGATA TBR	9868	HOWARD YUANG CLC PLN RDS WLD
1093	- PETE YAMAGATA CLC ECN TBR	11311	YUBA CITY COUNCIL RONALD SOUTHARD
4611	- SHELLEY D YAMAMOTO CLC		ALT GEN
11381	- SHELLEY D YAMAMOTO CLC	3850	YUBA CO BOARD SUPERVISORS MICHELE
236	- VIRGINIA YAMBAUSKEA CLC HRB		D MATHEWS CLC
6404	- KEVIN YANCEY ALT CLC HRB OLG REC	2529	YUBA-SUTTER CHAMBER COMMERCE
	RNG TBR WLD WRA		MARY KNAPP ECN GEN TBR
10719	- ELLEN C. YANDELL ALT CLC TBR WRA	4122	F A YUKIC CLC TRL WRA
4882	- ERIN YANKE ALT CLC ECN HRB OLG REC	3873	JOSEPH YUN' CLC ECN HRB TBR TRL
	RNG TBR WLD WRA	3346	JAMES YURCHENCO ALT CLC ECN HRB
6557	- STEVE YANZICK ALT CLC HRB OLG REC		OLG TBR
	RNG TBR WLD WRA	10785	BRAM ZAALBERG ALT CLC HRB OLG REC
7262	- SDIANA YAO ALT CLC TBR WRA		RNG TBR WLD WRA
8329	- BRET YAR ALT CLC HRB OLG REC RNG	8466	ELIZABETH ZABEL CLC HRB OLG RDS
	TBR WLD WRA		TBR WRA
8807	- E LAWRENCE YATES ALT CLC HRB OLG	10548	WALTER ZACE CLC GEN HRB TBR
	TBR WLD WRA	6492	ZACHANG & BRITNEY CLC REC TRL WLD
405	- EUGENE B YATES TBR		WRA
1110	- ACQUE YATES CLC HRB	9906	H ZACHARIAS CLC
2946	- MEREDITH YATES ALT CLC HRB LNC OLG	3689	STEVE ZACHARY CLC ECN OLG WRA
	TBR WLD WRA	596	TRACN ZACHARYASZ CLC
6651	- MEREDITH YATES ALT CLC ECN OLG	10069	JOANNA ZADRA ALT CLC ECN OLG RNG
	RNG TBR VIS WRA		TBR VIS WRA
316	- YAMAL YAWSEM CLC HRB RNG TBR WRA	11738	DAIL N ZAK TBR
10906	- BONNIE YBERBIDE TBR	6664	JESSE ZALOUER ALT CLC ECN OLG
2375	- REBECCA L YEGGE ECN GEN VIS		RNG TBR VIS WRA
3942	- WILLIAM YEILDING ALT H2O HRB REC	826	CARLOS ZAMORA TBR
	RNG TBR TRL WRA	11416	JAIME ZAMORA GEN TBR
2993	- SYLVIA YIEN ALT CLC ECN OLG RNG TBR	6677	MARGO ZAMUDIO ALT CLC HRB OLG REC
	VIS WRA		RNG TBR WLD WRA

3528	- JOHN F. ZANGARI: TBR	6369	- MURAT ZILINKI: ALT CLC HRB OLQ REC
285	- JEFFREY ZANKEL: CLC HRB RDS		RNG TBR WLD WRA
3779	- JEFFREY ZANKEL: ECN HRB RDS TBR	8218	- ERICA ZILLES: ALT CLC HRB OLG REC
3018	- ROSLYN ZANKICK: ALT CLC HRB OLQ TBR		RNG TBR WLD WRA
	WLD WRA	10729	- DOROTHY H. ZIMMERMAN: ALT CLC TBR
819	- MARTIN ZANN: ECN QEN		WRA
646	- JOSEPH M. ZARUM: ALT CLC HRB TBR	1309	- ROBERTA DMMERMAN: ALT CLC ECN
5882	- CHERYL ZATNCHNI: ALT CLC HRB OLQ		HRB OLG REC TBR VIS WLD
	REC RNQ TBR WLD WRA	11305	- ROLF ZIMMERMAN: CLC
10099	- DUANE ZAUNER: ALT CLC ECN OLQ RNQ	7771	- VICTORIA DMMERMAN: ALT CLC TBR WRA
	TBR VIS WRA	10962	- SHARON L. ZIMMERMAN: ALT CLC ECN
6852	- ARTURO R. ZAVAK: CLC TBR		FSH H2O HRB SNP TBR TRL WLD WRA
10078	- TED ZEFF: ALT CLC HRB OLQ REC RNG	9620	- CATHERINE ZIMMOR: CLC OLG TBR WRA
	TBR WLD WRA	108	- RUDY M. ZINGLER: CLC TBR
929	- TED ZEFF, PH.D.: CLC TBR	4133	- JOAN ZIPPERT: ALT CLC ECN PLN WRA
1366	- LARRY ZELLNER: RDS TBR WRA	1099	- RHONDA ZOBEL: CLC DRT REC WLD
3383	- B. ZELWER: ALT CLC HRB OLQ TBR WLD	5139	- JONATHAN ZOURNE: ALT CLC HRB OLQ
	WRA		REC UNG TBR WLD WRA
8352	- STEVE ZEMBACH: CLC FSH OLQ REC TBR	9217	- MATTHEW P. ZUCCA: CLC TBR
4499	- NANCY ZENO: CLC HRB RDS REC TBR VIS	20500	- SYLVIA ZUCK: TRL
	WLD WRA	271.2	- LOREN ZUCKERMAN: CLC FLE QEN LND
3152	- FRANCINO J. ZEROUR: QEN TBR		RNQ TBR
9709	- DONNA G. RON ZEVALKINK: ALT CLC ECN	4118	- VICTOR ZUMBRUNNEN: CLC TBR TRL WRA
	OLQ RNQ TBR VIS WRA	6856	- MICHAEL ZUMOLT: ALT CLC HRB TBR
6592	- TOM G. JILL ZIEBARTH: ALT H2O RNA TRL	9835	- JOYCE W. ZUNIGA: ALT CLC TBR WRA
2137	- ROSE ZIERKE: CLC	8305	- CARLOS ZUVALE: ALT CLC HUB OLG REC
6368	- ELLEN ZILINKI: ALT CLC HRB OLQ REC		RNQ TBR WLD WRA
	RNQ TBR WLD WRA	171	- DAVID ZWEIG: CLC

THOSE WHO RESPONDED AFTER THE COMMENT PERIOD CLOSED

DON & MARGOT ADAMS
MR & MRS. ALAMEDA
CARL ALBERT
BARBARA A ALEXANDER
SILVIA ALVEGUE
MARILYN ANTHONY
WENDY ARMIJO
CLIFFORD BACHARD
LYLE DEAN BAGATTI
MARK & MELINDA BAILEY
FRANK BALLARD
STUART K. BARR
JOSEPH BARRON, II
WESLEY BARRY
JIM BATCHELOR
JOYCE BAUMAN
J MULLINS & J BAYLIE
ROD BEDAYN
BRENDA BEELEY
LIBBY W BENNETT
MAURICE & MARTHA BERG
EMIL EERGER
ROLAND D. BERGFELT
RICHARD & DEBBIE BERTUCCI
LAWRENCE BLACK
MEGAN BLACK
TERRY BLAIR
MICHAEL BLEVE
JOHN V EOCKERN
LINDA L EOGART & SUSAN E. SHEMBORG
GREGORY BOLM
ELOISE EOSORE
MARTY BOYD
PATRICK BRADY
MRS RT BREUNER
BARBARA BRILL
LINDA BRODIE
STNE BRODIE
CONNIE BROOKS
MEGAN BROWN
KAREN BUICKEROOD
GEORGE BURCHAM
BURDICK FAMILY
JOHN F. BUSCH
CA CHAMBER OF COMMERCE M.J. HUETTER
L CALLAGHAN
ERNEST CALLENBACH
G E CANN
ELIZABETH CANTEGRIOCOME
CHRIS CARPENTER
SAHARA CARRICK
MR. & MRS CARTER
E & M CASTALDINI
HELEN CASWELL
ROBIN CAVENY
BILL CENTER
ROBIN CENTER
CAROLYN CHAINEY-DAVIS
PETER CHURGEL
KEVIN CLARK
ROE CLEGHORN
JANNETTE COCHRAN
JEFF COCHRAN
STEVE COFFEY
ALAN COHEN
DAW COLE

PADDY COLLINS
STEVE CORRIGAN
DOUG & JANE COX
EARTE CRAES
DAVID R CRAFT
RAY & PATTY CRAYCRAFT
EVELYN CRESS
CROCHETT
JEANNE DARLING
RUDY DARLING
HILARY DART
RAJIV DAS
PATSI DAUGHENTY
JONES DAVES
EARNAEY DAVIDSON
CARRIE D DAWSON
D DEAMICIO
BARBARA DEAN
GEORGE DEAN
VICKI DEAN
G. DEARDORFF
ISABELLE DECORTE
SANDRA DELAY
SHARON DELGATO
KATHRYN DEPESA
MARGARET DERIGGE
JEAN DERR
LURA DIETRICH
RAM DIMITRI
HERE DIMOCK
MARGARET DIMOGK
KARI DINELEY
DANIEL DOBBERT
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CHERYL DRAKE
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DAVID DRAXLER
VERA DRUMMOND
MR & MRS FRED DUERST
LESLIE DUNCHEL
DIANE DYER
PATRICK DYER
RITA ECHOLS
SHARON EDGAR
JAMES EDWARDS
JAY EGAN
SUSAN ELLENEROGEN
LISA ELLIOTTE
S ENDRISS-LELISE
TERESA ENGLAND
RUTH ENGLISH
ARNOLD ERICKSON
RICHARD EVERETT
GARY & VALERIE M FALXA & CONNOR
MARJORIE FASELER
JESSE FELCHER
RICHARD FENNIMORE
JOSE FERNANDEZ
ROSEMARIE & RICH FERREIRA
JUDY FIELD
KIM FLOAL
PHILIP FLOYD
WILLIAM FLOYD

DIAN FOERSTER
JEANNE FOERSTER
MARCIA FOLVA
FRANK FREESTONE
MARGERY FREESTONE
URSULA FREYMUTH
JOHN FRIEDERICY
BRIAN FRY
CHARLOITE GABRIEL
JOHN GABRIEL
BOB GAMAGE
KENNETHA GANGLER
BERNICE GARCIA
ANDREA GATES
EMMA GERHART
DENNIS GERUGHTY
RUTH GHIO
CARRI GICKER
JAMES S GILLEN
WALTER GILLEN
LESLIE GILLETTE
GREGORY D GILLOS
JUDITH GIPS
C L GLASS
PEARL GLASS
RHONDA GLUCKMAN
ALBERT GOAD
BRIAN GOAD
ANNE GOATLEY
S. GOFFIN
ALBERT & BETTY GONZALEZ
BETTY GONZALUEZ
HENRY GOODMAN
MARY GOODMAN
PETER & SUE GRAF
SAM & BEN GRAF
JOHN GREE5R
RICHARD GREEN
RICHARD W. GREGRATH
MR. GRIFFITH
DAVID & SHEILA GROSS
E. GROSS
R W HAITER
G A HALL
IDA HALLING
JOHN HARRISON
WALTER M HARVEY
NANCY HENSON
MAZA HERREN
CHRISTINE HEWITT
AMY HIBBITT
EDWARD E HILLS
POLLY HILSALUK
CHERYL HIRAOKA
WAYNE HIRAOKA
JUSTIN HIRSH
JOHN HOLLAND
BETTY HOLLIDAY
JOHN HOLT
ROBERT B HOOD
M HOUSE
MICHAEL & MARY HUNT
BRUCE IVY
LOUISE IVY
LOUISE ANN IVY
CLYDE JACKSON
LYNDA JACKSON
DON JACOBSON
PAULA JAFFE

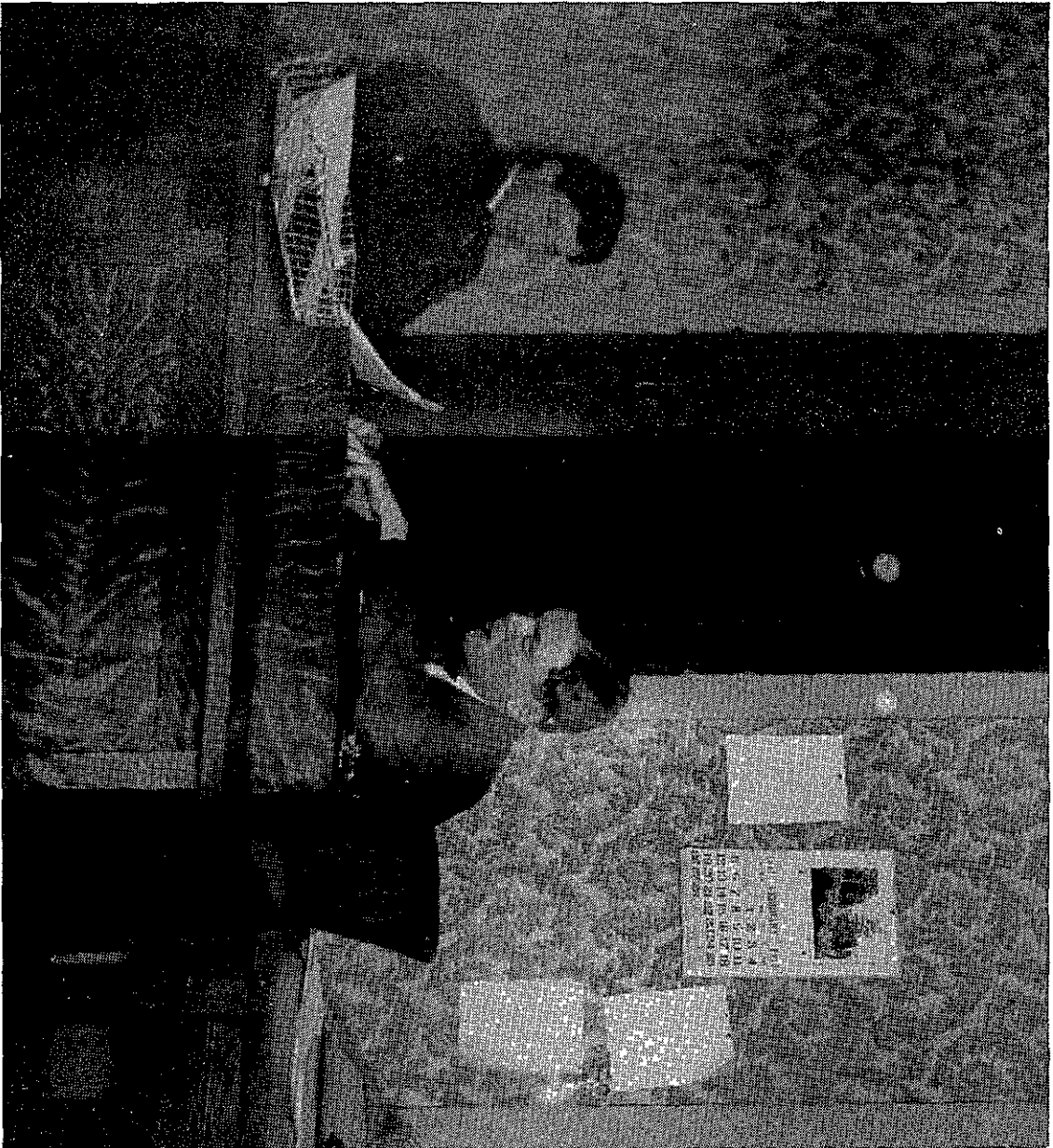
SANDRA JAMICOT
JEFFREY JAMOSON
DAVID JANIRUORL
EDYTHE JAON
JOHN JEFFREY
SALLY JEFFREY
CALVIN JERNEY
HOWARD JILLIAN
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ERIE & DANNA JOHNSON
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TY ROSS JOHNSON
DANA C JONES & DANIELE R ONSTOT
JEAN KEARNS
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DEE KENVILLE
MYRTLE KIMBERLIN
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JAYNIE KIND
STEPHEN KING
KIWIASHA
TANEMI KLAGG
BOB KLEIN
GLEN & MARTHA KOCH
TOMMY KOLSHINSKI
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MICHAEL LAFURO
KEN LAMAY
ELIZABETH LAMBERT
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NANCY LOWER
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MICHAEL MANETAS
CLIFF MANROSS
JUNE MANROSS
DAVE MARI
JEFF MARIN
ROBERT MARRONE
M S MARTIN
JOHN MATUCK
BLAZE MCCARTY
SAGE MCCOLLISTER
DIANE MCCORMACK

JOHN MCGEE
DANA MCGINN
LONNIE MCGINN
HAROLD L. MCGUIRE
J.C. MCLAREN
KATHRYN MEDLEY
MEHRENSIN
MICHAEL MELAS
SUSANNA MICHAELS
SYHIER MILL
CARRY MILLER
FELICE MILLER
LAURIE MILLER
PETE MILLER
JOSEPH MINTON
HENRY MISROCK
MADELIN MISROCK
MARIA MONDRAGON
MICHAEL MONTGOMERY
EILLEN MOON
RAY MOORE
WILLIAM MORIN
MARTIN & GAIL MORTENSEN
C. MOSS
GLADYS MOVDANADO
BONNIE MURPHY
BETSY NEAVER
DAVID NEAVES
EMMA C. NEFF
LORI NELSON
RICHARD NICKEL
LAURA NIESEN
BONNIE NOEL
DONNA NONNENKAMP
LORI NONRATH
JAMES NORMAN
BARBARA NOWELE
ALLAN NYSTROM
J.H. OAKLEY
BECKY OCONNOR
TIM OCONNOR
VIRGINIA OKANTZ
T.W. OLSON
DAN ONEIL
JEROME ORLOFF
PAULA ORLOFF
BENJAMIN S. ORLWE
MARGARET OSYPOWSKI
THOMAS OSYPOWSKI
BOBBI PALLAR
NEG PALLEY
FAY PALMER
CHARLES PARDAW
DOROTHY PARDO
DAVID PARKER
MIKE PARKINSON
COWL PARSONS
MIKE PASNER
D.M. PASSALACQUA
AILEEN PAYTON
PETE PENNISON
BETTY PEPPER
MARSHA PERALTA
LYNNE PERKINS
LINDA PERRY
MICHAEL PERRY
PAUL PERRY
BOB PETERSEN
JANET PHILLIPS PETERSON

KURT PETERSON
REVERAND GARY PFLUEQER
ALAN PHILLIPS
JOHN PIERCE
NARA PIERCE
PATRICIA PORTER
EDWARD PREISS
MONIKA PREISS
MRS. EDWARD PREISS
SHARON PROTSIK
CHRIS & BRUCE PUCKETT
CHRIS RASHELLE
NANCY REAM
RANDY RICKARD
RAYETTE RINGLE
LINNEA RITTER
ROSS RITTER
MONIQUE ROBIN
BYRON & KIMBERLY RODD
LISA ROWE
DENNIS RUBENSTEIN
ROBERT J. RUTH
MRS. M.R. RYAN
SABINE WOMEN
NANCIE SAILOR
ANABIL SARCIA
PAM SATU
BASIL SAWBLER
FRED SCHINDEWOLF
DIANE & GREG SCHNEPPLE
CARMEN SCOTT
WILL SEBALL
JENNIFER SELAK
HEIDI SENLY
ROBERT B. SNERSON
BARBARA SHAPPERT
LOIS B. SHELLHAMMER
JAMES SHORT
SIERRA ENTERPRISE
JOHN SIMMONS
E. SKOPP
NATHANIEL SLEIN
ALFRED L. SMITH
DORIS SMITH
JOHN SOUBIER
STEVEN SPRINKEL
ELAINE STANSFIELD
GINA STENBERG
KATY STENBERG
WARD & LUCILLE STEWART
BARRY SUDLER
JEAN-LUC SZPAKOWSKI
JEAKLUC SZPAKOWSKI
TOM TABER
STEVEN K. TATE
VIRGINIA TEMPLE
MARY TENOALL
MARCIA TENDICK
SCOTT THEIS
STEPHEN THOMAS
DAVID THOMPSON
MARLKYS L. THOMPSON
SUSAN THOMPSON
EDWARD THROLKELD
HENRY A. TORTORA
RUSSELL TOWLE
STEPHEN TRESIDDER
JON TRETER
MARY TRETHERWEY

KRISTINA TURNER
MR. & MRS JOHN TURNER
B. TYKE
PHILLIP, TERI & MIKE TYODD
ERICK VAN WINKLE & JENNIFER BUCHNER
WILBUR G VAUGHAN
JAMES VOCATURE
STEPHEN WEBB
KARL WEEMS
DAVE WEIDLING
NERSA & DENNIS WETTEMANN
CINDY WETZEL
MARK WEYMAN
T L WHEELER
ROBERT WICHINSON
ELIZABETH WIECHA
JANUB WILHELM

DANNY G. WILLIAMS
PATTI L WILLIAMS
TY WILSON
NANCY WILSON
JON WITTLER
SARAH WOERNER
MR. & MRS WOLF
STEPHANIE WOLTERS
L WONG
HEATHER WOOD
JEFFREY WOODHEAD
K. WOODLAND
C.P. WOODRUM
DOREEN & DAN WOOLHETHER
MEREDITH YATES
MR & MRS. ZIMMONS
CHERYL ZUTTERMEISTER



Forest officers in clerk's room, 1911

PUBLIC RESPONSE SUBJECT CATEGORIES

RESOURCE CATEGORY	CODE	TOPIC NUMBERS	PAGES
Air Quality	AIR	A013-A017	A148 - A149
Alternatives	ALT	M006-M023	A150 - A151
Economics/Budget	ECN	6001-BO90	A152 - A164
Fire/Law Enforcement	FLE	FOO1-F019	A165 - A169
General/Multiple Use	GEN	M001-M005 M024-M033	A170 - A172
Grazing/Range	RNG	6001-GO85	A173 - A184
Historical/Archaeological	HST	R220-R227	A185 - A186
Lands/Mining/Utility Corridor	LND	L001-L012	A187-189
Planning Process	PLN	P001-P055	A190 - A198
Recreation, General -Trails -Wild and Scenic Rivers -Wilderness/Roadless Areas -Winter Recreation	REC TRL WSR WRA WIN	R150-R208 X001-X093 R001-R006 R010-R065 R070-RO104	A199 - A208 A209 - A216 A217 - A219 A220 - A231 A232 - A239
Research Natural Areas	RNA	N001-N028	A240 - A243
Roads/Engineering	RDS	E001-E070	A244 - A250
Sensitive Plants	SNP	D001-D037	A251 - A256
Soils	DRT	S001-S038	A257 - A262
Special Interest Areas	SIA	R066-R068	A263 - A265
Timber, General -Clearcutting -Herbicides -Old growth	TBR CLC HRB OLG	ALL OTHER T'S T051-T074 T271-T289 T211-T221	A266 - A305 A306 - A310 A311 - A314 A315 - A316
Urban Interface	URB	U001-U013	A317 - A319
Visual Quality	VIS	R110-R145	A320 - A327
Water	H2O	H001-H120	A328 - A345
Wildlife, General -Fisheries Spotted Owls	WLD FSH OWL	W001-W119 1001-1063 0064-0080	A346 - A358 A359 - A370 A371 - A373

RESPONSE TO PUBLIC COMMENT

HOW TO USE THIS SECTION

The public questions or topics are listed alphabetically under general resource categories starting with air quality and ending with wildlife.

Each topic listed is either a single comment or represents a group of similar comments. The answer is listed as the response.

In a response, reference is often made to another topic that provides additional information. See facing page for overall subject categories. Refer to columns titled Topic Numbers and Pages to find the referenced topic.

AIR QUALITY

Topic #A013

1. Manage to maintain or improve air quality.
2. Forests are important as an oxygen source and to cleanse the air
3. Citizens Alternative will do all of the above.

Response to #A013

Air quality is an important resource and management activities on the Tahoe NF will be conducted to protect it. We have very limited ability, if any, to improve the air quality as fixed sources on private lands and the automobile on existing roads (both major pollutants) are not within our control

Smoke from prescribed burning and dust from logging operations are the two primary sources of air quality degradation as a result of Tahoe management activities. Both are short term effects and both are mitigated for the most part.

The major source of dust from logging operations is a result of hauling logs over non-surfaced roads. This is mitigated by watering and/or using other materials to hold the dust in place. Road dust is not only a short term effect, but also is very localized.

Smoke from prescribed burning is mitigated by regulations established by the Federal Government, California Air Resources Board, local Air Pollution Control Districts, and our own Smoke Management Guidelines. Smoke is also a short term problem, but can be very irritating if not controlled properly. The above mentioned guidelines and regulations are to restrict or minimally impact smoke sensitive areas such as wilderness areas, cities, towns and rural residential areas from particulate matter and/or emissions given off by forest residue burning.

The Citizen's Alternative does call for the suspension of burning which would significantly reduce the amount of smoke being put into the atmosphere, but the alternative treatment of slash would leave large quantities in the woods that would raise the potential for large, damaging wildfires and proposes chipping and scattering which would raise costs of treatment significantly.

It is expected that Forest Management will continue to rely on the burning of residue and plant material to reduce fire hazards, improve wildlife habitat, prepare sites for planting, etc. Following the various air

quality regulations and smoke management guidelines will maintain air quality at an acceptable level

Topic #A014

1. Clearcutting is good for industry, but not for air quality.
2. Clearcutting is negative to air quality.
3. Moved to Truckee for clean air.

Response to #A014

The response to #F013 is applicable to this topic also.

This topic is more a general statement against clearcutting than air quality as burning does not necessarily go with clearcutting; however, when it does smoke effects will be controlled by following the various regulations and guidelines as set forth by the regulatory agencies and the Forest Service Smoke Management Guidelines.

Topic #A016

The proposed wood-burning power plant seems very destructive to the air quality in the Valley. In view of the Company's (Koppens) past disregards for air quality, rejection of coal-burning plant by voters, and measures to regulate wood stoves and the need for a permit to do 'dooryard' burning this plant is an impossibility.

Response #A016

This comment is not pertinent to the Forest planning process as it is a privately owned plant located on privately owned land well outside of the Tahoe NF.

Topic #A017

Need information on:

1. Meaning of "no quantitative value is placed on air quality:
2. Location of monitoring stations to measure pollutants (including visibility) in such areas as Desolation WA.
3. Extent to which smoke will be minimized in Desolation WA.
4. Measures to prevent 'significant determination' in Desolation WA by TNF Activities.

5. Opportunity and inclination to change Granite Chief WA from Class II to I.
6. Increments by years recently in air quality impacts, affecting Forest from impacts from sources inside and outside the Forest.

Response #A017

'No quantifiable value' means exactly what it says. It does not mean that air quality has **no** value, **only** that it is not, 'quantifiable'. The Forest Service and the Plan puts a high value on air quality. It is a requirement to protect resources of the National Forest System Lands from adverse impacts which may result from air pollution. We have been actively involved with air quality regulatory bodies developing guidelines and regulations pertaining to smoke management and air quality.

We do not currently have **any air** quality monitoring devices on the Forest.

Current regulations and those being developed restrict and/or minimize the amount and kind of emissions from prescribed burning from affecting smoke sensitive areas including the Desolation Wilderness Area.

The Forest has no plans to redesignate the Granite Chief WA from a Class II to a Class I area.

We do not have any information on the air quality impacts **on** the Forest from sources inside or outside.

A current emphasis is to increase utilization of forest residue to reduce the amount of burning thus reducing the total amount of emissions.

ALTERNATIVES

Topic #M006

I support Alternative A because it provides for an appropriate mix of resource production and protection and was written by professionals and well thought out

Response #M006

All alternatives were considered by the Forest management team. See the Record of Decision for rationale for the selection of the Preferred Alternative.

Topic #M007

I support the Citizen's Alternative because it provides for an emphasis on amenity values including wildlife, water quality, soil productivity, recreation and scenic quality while also providing jobs for the timber industry and wood for consumer demands.

Response #M007

See Topic Number M006. We modified our original Alternative E after the Citizen's Alternative in cooperation with Sierra Club representatives. See Chapter 2 in the FEIS for descriptions of the Alternatives.

Topic #M008

I support Alternative I because it allows the greatest flexibility and greatest number of acres in multiple use allocation, is important for the economy and jobs, and won't lock up more acreage in single use resources.

Response #M008

See M006 above. Alternative I of the draft was modified to reflect the concerns of the timber industry and is called the CMD alternative. Representatives worked with us to model this alternative

Topic #M009

I support Alternative I modified to include the range management of Alternative A.

Response #M009

Recommendation was included in Alternative CMD.

Topic #M010

I support Alternative I as modified by the Yuba-Sutter Alliance for the Environment and Resources

Response #M010

These recommendations were also taken into account with the modification of Alternative I. They were modeled into Alternative CMD

Topic #M011

I support Alternative I as modified by the Plumas Sierra Citizens for Multiple Use.

Response #M011

These concerns were also taken into account while revising Alternative I. They were incorporated into Alternative CMD.

Topic #M012

I support Alternative B, Current Management or Alternative C, the RPA Alternative.

Response #M012

These alternatives were again considered in the FEIS. See Record of Decision for the rationale for the choice of alternatives.

Topic #M013

I support Alternative C since the goals were developed through the RPA Program and it meets the needs of all people

Response #M013

See M012 above.

Topic #M014

I support Alternative E because it provides resource protection and the Cost/Benefit ratio is good.

Response #M014

Alternative E was modified to reflect the alternative proposed by the Sierra Club which they called the Citizens' Alternative. This is reflected in the NMK (Nonmarket) alternative.

Topic #M015

Supports Alternatives E, F, and G because they provide for protection to environmental resources.

Response #M015

The NMK Alternative is a new version of Alternative E. It provides for greater emphasis on environmental resources. Alternatives UNE and the PRF also pro-

vide for greater emphasis on environmental resources Alternative F and G were dropped because they generated very little public comment, other alternatives better responded to the mix of opportunities provided, and they provided limited responsiveness to the public issues

Topic #M016

I support Alternative H because it provides for both intensive timber management as well as range opportunities.

Response #M016

Alternative CMD was designed to provide for both timber management and range opportunities. Alternative H provided limited responsiveness to the public issues, would create unacceptable conflicts among the the grazing, riparian, and water resources with resultant environmental degradation, and therefore was considered but eliminated as a viable, implementable alternative in the final EIS.

Topic #M017

Considerable opposition to Alternative A and the Proposed Plan was expressed for reasons found in resource topic areas throughout this appendix.

Response #M017

The Final Plan and EIS were modified based on public concerns. Alternatives, resource descriptions, Standards & Guidelines, Practices, management areas, and management area emphases were modified

Topic #M018

I oppose Alternatives I and A because of the damage they will cause to the environment and recreation opportunities.

Response #M018

See the Record of Decision for the reasons why the PRF Alternative was chosen. Both alternatives were modified to be more responsive to the issues raised by the public, becoming Alternatives CMD and PRF, respectively

Topic #M019

I am opposed to the Citizen's Attentive and Sierra Club ideas because of the extreme emphasis on preservation and locking up the Forest for recreation and wilderness only and because of the loss of jobs it would cause.

Response #M019

Wilderness and recreation is part of the multiple use mission of the Forest Service. Both recreation and timber activities provide jobs directly and indirectly. See Table 4.2 in the EIS for the quantification of annual employment by alternative and the Record of Decision for the reasons for the choice of the Preferred Alternative.

Topic #M020

I am opposed to Alternative E because of its emphasis on semi-primitive nonmotorized recreation designations which are similar to wilderness and are not multiple use.

Response #M020

Semi-primitive nonmotorized recreation provides a needed form of recreation and is an important aspect of multiple use. Refer to the Record of Decision for rationale as to why the PRF Alternative was chosen.

Topic #M021

I am opposed to any alternatives that disrupt the natural Forest habitat.

Response #M021

See Response #M002.

Topic #M022

I am opposed to Alternative I and to the support Placer County Board of Supervisors gave it.

Response #M022

Refer to the Record of Decision for rationale as to why the PRF Alternative was chosen.

Topic #M023

I am opposed to Alternative H and J because of their emphasis on timber harvesting.

Response #M023

Alternatives H and J were not reconsidered in the final EIS. See response #M016 for the discussion of why Alternative H was eliminated. Alternative J was considered but eliminated because the results were similar to the RPA alternative. It provided limited resolution to the public issue of wilderness due to the passage of the California Wilderness Act of 1984, and the emphasis of intensive timber harvesting on lands not managed for semi-primitive nonmotorized recreation were similar to the theme of Alternative NMK. Alternative NMK is discussed in detail

ECONOMICS

Topic #B001

When deciding upon the Preferred Alternative, environmental effects (aesthetic quality, wildlife and resource preservation, etc) must be equally considered with the corresponding economic and social effects (resulting employment, county receipts, social groups, etc) in the Forest Plan decision making process. Realizing that compromises among competing interests must be made, the consequences of the Plan must be addressed directly.

Response #B001

The objective of forest planning is to maximize net public benefits. Selecting a Preferred Alternative involved making tradeoffs between economic, social and environmental objectives. These 'opportunity cost' representations are displayed in Chapter 2 of the FEIS.

Because net public benefits (NPB) cannot be quantified, identifying the alternative which maximizes NPB is necessarily subjective. Net public benefit calculations include economic factors such as the costs and benefits of timber and range management; and non-priced benefits and costs, such as visual conditions and populations of threatened and endangered species. Social considerations embodied in the theme of each alternative (such as the effects of the proposal on estimated employment, income, federal and county revenues, anthropological and cultural site reservations, and social groupings in the impact area) are also considered in the evaluation of NPB's. Net public benefits also encompass the Forest Service appraisal of the impact forest management policies have on the capacity of communities to accommodate changes in employment and income that accompany business cycles and the evolution of local economies.

Chapter 4 of the FEIS discusses the analysis of the predicted impact on predominant social groups in the impact area in terms of the effect of each alternative on attitudes, beliefs and values characteristic of each group.

Topic #B002

Activities with monetary returns should be given more weight than non-revenue activities.

Response #B002

The values used for each priced resource are documented in Appendix B (EIS) The relative emphasis

between 'monetary' and 'non-monetary' and between amenity and commodity outputs varies with the theme of each alternative The mix represented by the Preferred Alternative is, in the view of the Forest Service, that which maximizes Net Public Benefits. See Record of Decision

Topic #B003

Consider the economic value of water quality and quantity.

Response #B003

Valuation of water quantity is described in Appendix B (EIS). The analysis makes no provision for valuing water quality beyond ensuring that State standards for water quality would be met in all alternatives By implementing Best Management Practices, Appendix E (Plan), water quality will be protected.

TOPIC #B004

Emphasize aesthetics over 'economics'.

Response #B004

Refer to #B002.

TOPIC #B005

Timber supply should be analyzed at the statewide level.

Response #B005

Appendix N (EIS) is an addition to the FEIS which discusses statewide trends in the supply and demand for timber

Topic #B006

Why is the Tahoe B/C ratio for timber three times that of the Stanislaus National Forest?

Response #B006

TNF timber costs and receipts are expected to be significantly different from the Stanislaus National Forest This variation may reflect dissimilar management restraints, topographical differences, and differing resource distributions. In addition, direct comparisons between individual resource benefit and cost categories may be misleading because, under multiple use management, many resource outputs have common costs that cannot be reliably separated and attributed to individual resources

Topic #B007

The EIS should clarify the TNF treatment of budgets in the alternative evaluation process. Specifically, the plan should assess the prospect of budget shortfalls (as budget/manpower allocations must be compatible with the selected plan) and discuss which resource management activities would be emphasized if the described situation arises.

Response #B007

Appendix I (EIS) has been included with the FEIS which discusses the role of the budget in forest plan implementation. Budget changes do not affect the land allocation. Decreasing budgets would have absolute effects on the rate of plan implementation. However, the relative mix of management practices and resource programs implicit with a given budget request would still maximize net public benefit.

Topic #B008

I support the use of the budget system to determine the level of timber harvest.

Response #B008

Forestwide standards and guidelines are used in combination with economic, social, environmental, and budgeting considerations to determine the management direction for all TNF resources. Please see #B007 and #B062.

Topic #B009

There is a need for a stronger cash flow analysis.

Response #B009

Forest planning is concerned with the management of Forest resources, with multiple use objectives, over time. Maximizing profit is not a primary Forest Service objective, but revenue and cost information can be used to guide the decision making process. A cost accounting system for timber sales on National Forest land (TSPIRS) has been implemented. The information generated from TSPIRS is available on a continuing basis. Also, Table 2.17, page 2-87 of the FEIS, documents average annual cash flows and noncash benefits for the first and fifth decades.

Topic #B010

Clarify that Lake Tahoe Basin Management Unit costs are not included in the analysis.

Response #B010

The requested clarification has been added to Chapter 3 (Sec. B) FEIS.

Topic #B011

Economic environment section of the DEIS should include recreation/tourism and county budgets to capture the contribution recreation makes to income and employment.

Response #B011

While TNF activities have implications for county governments, specific analysis of those impacts are beyond the scope of Forest planning. The contribution that recreation makes to the local economy, in terms of employment and income, is documented in the TNF Socio-Economic Overview (available in the JNF Supervisor's Office). Chapter 4 (FEIS) displays direct, indirect, and cumulative environmental consequences, including employment and other economic effects, in the impact counties (pg. 4-3, FEIS).

Topic #B012

Southern California consumes 53% of all lumber used in the state and should be considered an extended zone of influence.

Response #B012

We acknowledge the importance of Northern California as a supplier of the lumber for the Southern California market. However, the Tahoe produces a very small portion of the total Southern California market; and it is not possible to trace the effects of changes in TNF management in the economy of Southern California. The FEIS contains a more comprehensive discussion of the Statewide timber supply-demand situation, in Appendix N, than was provided by the DEIS.

Topic #B013

The Plan does not adequately address employment effects because it only considered people directly employed in the timber industry.

Response #B013

As described in Appendix B (EIS), the TNF used the RIMS approach to estimating employment and income effects. This procedure provides estimates of direct, indirect, and induced employment effects. Estimates were provided for jobs created in each resource area as well as those provided by administration of the Forest

Topic #B014

More wilderness would lead to increased unemployment

Response #B014

None of the alternatives propose additions to the National Wilderness System. The alternatives vary in the amount of undeveloped area proposed. The level provided in the Preferred Alternative, with the accompanying economic tradeoffs, was considered to be the level which maximized Net Public Benefits.

Topic #B015

I oppose protecting spotted owls because of the negative economic effects.

Response #B015

The regulations for implementing NFMA (36 CFR Part 279.27) require maintenance of the viability of vertebrate wildlife species. A range of levels of protection above the minimum viable level was examined in the various alternatives. The Preferred Alternative proposes a strategy consistent with the intention of the regulations.

Topic #B016

I oppose any decision which would adversely affect the local economy.

Response #B016

Many factors were considered as the alternatives were compared and evaluated. Effect on the local economy, including jobs, was one of those factors.

Topic #B017

I oppose reduction of timber harvest because of its effect on jobs and social structure.

Response #B017

Please refer to response #B016.

Topic #B018

Reducing or maintaining ASQ would have negative effects on county revenues and jobs.

Response #B018

Please refer to #B016.

Topic #B019

In the alternative selection process, recreation should be given more emphasis than timber because it directly contributes more to the Nevada County economy than logging does.

Response #B019

Forest planning is concerned with the management of all Forest resources, in accordance with multiple use objectives, over time. Please refer to #B001. Both the recreation and the timber contributions are displayed in Table 4.1 and 4.2.

Topic #B020

The areas of Castle Peak, Grouse Lakes, Yuba Rivets, and North Fork American River are more valuable as recreation resources than timber resources.

Response #B020

With the exception of NFAR, this is recognized in the Forest planning process and these areas will be managed with a recreational emphasis. The recreation values on steeper slopes of the NFAR area are acknowledged and these will be managed within semi-primitive non-motorized guidelines (MA 87 American). The timber values on the higher slope in MA 84 (Humbug-Sailor) exceed the corresponding recreation values. This area will be managed with an emphasis on timber. Please refer to Management Area descriptions and Chapter 3.

Topic #B021

Timber management would yield negative net benefit if its effects on recreation were considered.

Response #B021

Valuation of outputs is described in Appendix B. It is Forest Service policy to manage TNF resources in accordance with multiple-use objectives. The opportunity costs associated with timber management (including tradeoffs with recreation) are extensively considered in the alternative selection process. Timber management intensities vary throughout the array of alternatives.

Topic #B022

Full economic potential of recreation is not realized - it could offset losses from less intensive timber

management - i.e. by charging user fees for all NF uses equal to the cost of providing services

Response #B022

National Forests provide many forest outputs either at no charge to consumers, or at a charge less than the willingness to pay price. This policy is established by a variety of laws which would require Congressional action to change. The TNF does not have the discretion to charge user fees for dispersed recreation and has little discretion over the level of fees charged for most Forest uses. The development, administrative, and enforcement costs associated with Forestwide implementation of a complete user fee program would likely exceed the corresponding benefits. As it becomes cost efficient, the Forest user fee program will expand. Presently, fees are collected for many uses of Forest resources including developed recreation, range, timber, and fuelwood.

Topic #B023

Plan does not recognize the economic importance of recreation.

Response #B023

Recreation is incorporated in the FORPLAN analysis, and is also evaluated outside the model. Economic aspects of recreation are discussed in FEIS Chapter 2, 3 and 4 and Appendix B.

TOPIC #B024

Demand for recreation is increasing.

Response #B024

Projected growth of recreation use is discussed in FEIS Chapter 3.

Topic #B026

Need increased revenues to support expanding recreation demand.

Response #B026

See discussion of the budget allocation Process in Appendix I (EIS).

Topic #B027

Northern California doesn't have a competitive advantage in timber production

Response #B027

Statewide timber supply and demand conditions (Region 5) are discussed in Appendix N (EIS).

Topic #B028

Plan fails to fully develop and discuss several important market factors-- demand, mill capacity, effects of budgetary constrained timber output.

Response #B028

Mill capacity is discussed in Chapter III (A.M.S.) of the Proposed TNF Plan. Appendix N (EIS) and I (EIS) were prepared after the DEIS was issued. These two appendices discuss timber supply-demand relationships and the role of the budget in plan implementation in more detail that was presented in the DEIS.

Topic #B029

Uneven-aged management would increase employment.

Response #B029

Employment considerations are only one of the several criterion examined in the choice of silvicultural systems (see Appendix L).

The type of employment this comment refers to is positively correlated with the volume of timber harvested. All other things remaining constant, volume harvested by uneven-aged management techniques would be less than the volume resulting from even-aged methods. Therefore, under uneven-aged management schemes, it is likely that the overall level of associated employment would decrease when compared to even-aged practices. In addition, uneven-aged management practices are more labor intensive, and are 70% to 30% more costly than clearcutting. Consequently, Forestwide implementation would result in cutbacks to other programs.

Topic #B030

Oppose a reduction of timber harvest levels because of economic effects.

Response #B030

Please refer to #B016.

Topic #B031

Below-cost timber sales are unfair to private timber owners.

Response #B031

While individual sales may be below cost, the Forest-wide timber program proposed in each alternative would return positive net revenue to the U.S. Treasury. It is not fitting to make comparisons between public and private interests in regards to National Forest management objectives. As a public land management agency, one of the principle Forest Service responsibilities is to manage all resources for public use.

Topic #B032

A supply of Forest Service timber is vital to the timber industry.

Response #B032

A range of timber supply levels was examined in the planning process. The level provided by the Preferred Alternative and the other resource opportunities which accompany that level of timber management intensity are considered to maximize net public benefits. See response #B001.

Topic #B033

Clearcutting harvest methods are not really the most economical practices when one considers all costs. Clearcutting promotes short-term profits at the expense of the environment.

Response #B033

Appendix L explains the rationale for selection of specific silvicultural systems.

TOPIC #B034

Support manual or mechanical methods of vegetation management to increase employment.

Response #B034

Forest management activities are designed to meet multiple-use objectives in a cost-effective manner. Please see Response #T142.

Topic #B035

I cannot believe there are no acres of economically unsuitable timberland.

Response #B035

The process of evaluating capable, available and suitable timber land removes those lands that are incapable of producing commercial sawlogs. Chapter 2 [section E, part I (FEIS)] outlines technological

and economic criteria for making these determinations. The figures presented in table 4.27 (FEIS) only include those acres that have already been classified as suitable and capable

This topic is also discussed in Appendix K (EIS), Identification of Tentatively Capable, Available and Suitable Lands.

Topic #B036

I do not believe there is a need for more lumber

Response #B036

Refer to Appendix N (EIS) regarding timber demand/supply analysis.

Topic #B037

Plan focuses on short-term benefits and ignores the long-term environmental and economic consequences.

Response #B037

The optimal management direction successfully balances short-term and long term goals and objectives, in terms of both environmental and economic considerations, for all resources. These goals and objectives are achieved in the most economically efficient manner. Consequences are analyzed and described in detail over a five decade period in Chapter 4 of the FEIS. Also, long term consequences have been assessed over a 150 year planning horizon

Topic #B038

State Yield Tax and 25% Returns both qualify as direct sources of county revenue.

Response #B038

The Economic Environment section of Chapter 3 has been revised to clarify the fund collection/distribution procedure.

TOPIC #B039

I oppose the Proposed Plan because of its reduction in harvest and county revenues.

Response #B039

The level of harvest of the Preferred Alternative will remain consistent with historical levels and will not reduce county revenues

Topic #B040

Returns to counties don't justify compromising the environmental protection.

Response #B040

Returns to the counties are one of the many factors taken into account in the Decision Making process. Other factors included visual quality, soil and water quality, wildlife needs, etc.

Topic #B041

Account for disparity between 1982 and 1st decade Returns to Treasury.

Response #B041

1982 was the bottom of the recession and a low point for timber harvest Harvest in 1982 was only about 33% of the ASQ of the draft Preferred Alternative and about 42% of the final Preferred Alternative. The disparity is compounded by the fact that the value of timber harvested was \$10300 per MEF which is less than the \$140.00 average first decade timber value in the preferred alternative.

Topic #B042

I oppose programs which lose money - need a better system of valuing resources.

Response #B042

Profit maximization is not a primary Forest Service goal. However, it is an agency goal to achieve resource management objectives in an economically efficient manner See Appendix D for reference to economic efficiency analysis Also, see response #B001.

Topic #B043

Timber values are too high.

Response #B043

The value used is the mean price paid for timber on the TNF during the 1979-1982 period This period was used to provide consistent comparisons among regions and forests. Prices paid for timber, based upon competitive bidding, vary with market conditions and business cycles Please refer to #B060.

Topic #B044

Use of 1982 as a base year is misleading because it was a low point in timber harvest.

Response # B044

1982 was selected for use as a base year at the National level to provide consistent comparisons among Forests and Regions. It is true that output levels related to timber were depressed in that year, but timber sale offerings were not. Sale offerings are the basis for comparison in the EIS.

Topic #B045

DEIS Table 2.24 fails to point out that recreation benefits are based on willingness to pay values

Response #B045

Valuation of resources is described in Appendix E. This table has been amended with a footnote concerning benefit values

Topic #B046

Explain the negative value for aerial logging in table B 27.

Response #B046

The description of timber values in Appendix B has been expanded to clarify derivation of aerial timber values.

TOPIC #B047

Recreation is more valuable than indicated by the DEIS.

Response #B047

The Forest uses 1985 RPA recreation values as directed by the Regional Office In establishing valuation standards, resource supply and demand conditions were analyzed Regionwide Recreation is an important issue on the Tahoe National Forest and is an important consideration in Forest Planning

Topic #B048

Old growth price projections are too low.

Response #B048

Old growth price projections are supported by historical TNF trends and old growth size and quantity relationships. Old growth harvests are generally more efficient than second growth harvests because the former generally yield more volume per acre and, in addition, usually have higher timber quality ratings.

Topic #B049

I oppose subsidization of the timber or grazing industries.

Response #B049

Grazing fees are established by Congress. Purchasers of National Forest timber pay for all timber harvested. The Forest Service establishes the minimum acceptable bid rate for all prospective sales, and these are all sold competitively. Purchasers bid according to fair market values of expected final products. Prices bid for TNF timber frequently exceed the Forest Service estimate of fair market value. The timber on the TNF is generally sold at a profit; money is returned to the Treasury.

Topic #B050

Oppose cross subsidization of timber species

Response #B050

The Forest Service is responsible for managing all suitable forest land, not just areas where high value species occur. The economic analysis performed prior to a timber sale evaluates a particular set of stands rather than individual trees. Except in high elevation true fir stands, these stands normally contain trees of several species. While it is true that some species have a higher value than others, it is also true that values associated with individual trees of the same species may vary widely, due to quality considerations. Forest Service professionals assess the relative values on a stand basis because under even-aged management systems, stands are managed rather than individual trees.

Topic #B051

I oppose the use of economics as a decision tool

Response #B051

Use of economics is mandated by NFMA and NEPA, but is only one of the considerations in the decision making process

Topic #B052

Explain the "balance" reduction in PNV in DEIS Table 2.23.

Response #B052

This refers to the cost which cannot be assigned to an individual constraint when constraint analysis by

subtraction is employed. This is the 'overlap' among constraints

Topic #B053

What accounts for the drop in PNV associated with CEE (constrained economic efficiency) and TES (threatened and endangered species) requirements and other management requirements?

Response #B053

The effects of the management requirements are discussed in the "Constraint Analysis" section of Chapter 2 and are displayed in Table 2.18 of the EIS

Topic #B054

The value of roads in place should be counted as a benefit in DEIS Table 2.24 and Table 3.6

Response #B054

Roads in place are neither counted as a cost nor as a benefit.

Topic #B055

Butte County belongs in the TNF impact area.

Response #055

As determined by TNF Socio-Economic criterion, the areas most directly influenced by TNF management activities are the counties of Nevada, Placer, Plumas, Sierra, and Yuba. TNF Planners recognize the effects that resource management activities have on extended 'zone of influence' areas. These areas have been included in Tahoe planning considerations, but the impact on these areas is of a lesser degree. Butte County is considered to be predominantly affected by the Plumas NF and was extensively analyzed as such in the Plumas FEIS. As described in Appendix B and Section B of Chapter 4 (FEIS), the TNF used the Regional Industrial Multiplier System (RIMS) to estimate both direct and indirect employment and income effects. This analysis method includes both the immediate impact area and the extended zone of influence, which includes Butte County.

Topic #B056

Only Nevada County was considered in the analysis of economic impact.

Response #B056

Economic conditions of Nevada, Placer, Plumas, Sierra, and Yuba counties are described in Chapter

3 of the FEIS; economic effects of the alternatives on these five counties are described in Chapter 4.

Topic #B057

Support an increase in grazing fees.

Response #B057

The TNF does not have the discretion to set grazing fees. These are established by Congress. See response #G030.

Topic #B057

Consider international trade effects of the Plan.

Response #B058

The effects of international trade are beyond the scope of Forest planning at the Forest level.

Topic #B059

Why wasn't a budget constraint used in all alternatives?

Response #B059

The objective of the alternative formulation process was to provide a diverse range of possibilities. True, the effects that restrictive budgets have on Plan implementation must be considered, but the use of budgets throughout the development process would have constrained opportunities, and ultimately, limited choices. It is Forest Service policy that Forest planning should not be predominantly driven by budget considerations.

Topic #B060

How can Forest Service justify basing timber prices on the average of high bids between 1979 and 1982? Between 1979 and present, average bid prices for Tahoe timber fell by 90%. This must be considered when setting a management policy which affects the 50 year blend of resources. The trend used creates a further 60% increase in the first 10 years. This projection is unreasonable. Even in light of cost increases and allowance for the discount rate, why is timber even cut in the first decade in the FLW benchmark?

Response #B060

Timber price estimates are based on historical trends. Timber price trends over the last century show increases above the rate of inflation during periods of economic expansion and show decreases at rates less than the level of prevailing prices

during recessionary periods. The Forest planning process assumes that the long term price trend will continue. The period 1979-1982 covered the peak to trough period of the last market cycle. By using the average value, we used neither the high peak price of 1979, nor the low trough price of 1982. Prices have since rebounded to about double the low price reached in 1982 at the bottom of the last recession

Timber price trends are nearly matched by timber production cost trends. The net effect is an upward price trend of 1/10 of 1 percent. In the National Forest planning process, the contributions that timber pricing trends make (in terms of harvest level and land allocation decisions) is insignificant (generally less than 1 percent). This is due in part to the Forest's expected harvest contribution to established Regional goals

The calculations that yielded the above mentioned 60% figure did not account for the fact that all values and costs in FORPLAN are assumed to occur at the midpoint of the planning period. This means that the trend rate is only compounded for 5 years for the first period, in the planning horizon.

The objective function of the FLW benchmark is to maximize PNV. Timber is cut in decade 1 to help achieve this objective economically.

Topic #B061

The discrepancies between Forest Service predictions and actual field measurement data suggest deficiencies in the RAM-PREP computer model.

Response #B061

RAM-PREP is a timber growth model that uses historical Forest specific growth and stocking limit data to develop yield coefficients. These are then used to estimate future yields from harvested forestland. Current yield projections are consistent with historical yield projections. As with any measure of central tendency, variability is expected from individual sample measurements. When considered on a Forestwide basis, these coefficients are believed to be statistically accurate.

Ideally, a yield model would be compared to stand development data representing all site conditions, ages, stocking levels, species composition, and management regimes that the model is intended to predict for. This data is currently being collected. As Forest research further refines the model's accuracy, this information will be incorporated into future projections.

Topic #B062

Why was Alternative E the only plan which utilized a low budget constraint? How did this affect its relatively low PNV as compared to other alternatives? Doesn't it more accurately reflect the budget restrictions under which the TNF is operating? Why was the PNV constraint carried to decade 12?

Response #B062

Alternative E was not constrained in this manner. The low budget associated with this alternative resulted from its relatively low management activity. It is Forest Service policy that Land and Resource Management Planning should not be primarily budget driven. All alternatives except the Current Alternative and the Low Budget Alternative (eliminated from detailed study first developed the multiple-use outputs desired, and then developed a budget for accomplishing those objectives. In almost all cases, a budget shortfall does not invalidate the land allocation nor the Forest Standards and Guidelines. If the Preferred Alternative budget is more than 20 percent larger than historical budgets, a sensitivity analysis is required to determine the validity of resource allocations

With respect to the timing of the PNV constraint, stands regenerated beyond the 12th decade cannot be harvested during the planning horizon. Therefore, it is not possible to account for these harvests. Also, the PNV constraint was extended to decade 12 because by the 72th decade, 99% of PNV had been accounted for.

Topic #B063

The budget should not be regarded as a constraint on alternative programs. The goal of Gramm-Rudman legislation is to reduce the deficit. It doesn't restrict capital outlays that provide net Returns to Treasury, which would help reduce the deficit.

Response #B063

With the exception of the Current Situation Alternative and the Low Budget Alternative (eliminated from detailed study), budgets were not a constraining factor in the alternative development process. National economic policy goals are not developed at the forest level. Please see #B062, #B065

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Topic #B064

MMR's and MIR's remove environmental considerations from the alternative selection process. The criteria that are left are social and economic.

Response #B064

The decision model portrayed by this comment is not accurate. Minimum Management Requirements and Minimum Implementation Requirements are base figures used for alternative development and comparison. These are not substitutes for environmental analysis. Refer to #B001.

Topic #B065

By emphasizing amenities as compared to commodities (revenue producing), the alternatives seem to exacerbate rather than alleviate the federal budget deficit.

Response #B065

Federal budget deficit analysis is a national concern and is beyond the scope of Forest planning. National Forests are managed in accordance with multiple-use objectives, not maximum Returns to Treasury Objectives.

Topic #B066

Since commodity outputs are valued 'as they leave the production site' then all costs associated with this process should be included, not just the stumpage cost.

Response #B066

Timber is valued as stumpage as it stands, uncut. All costs needed to produce stumpage are included. Logging cost is not included as a cost and log value is not the value assigned to timber. Implicit in the values is lumber value (freight on board) plus all costs of production and historical bid premium.

Topic #B067

If timber harvest increases by too much, prices will fall and unemployment will increase

Response #B067

True, assuming all other things constant, substantial increases in timber harvest rates would have unambiguous downward effects on wood product prices. General economic theory predicts this would increase economy-wide employment opportunities. The TNF by itself has a very limited effect on timber

market prices. See FEIS, page N-3, Section III for discussion of market price effects.

Topic #B068

Water values are overestimated, thus biasing plans to favor timber harvests.

Response #B068

Water values are established nationally (RPA assessments) and are subject to Regional and Forest modification upon the availability of superior information. This method of water valuation is used by all National Forests to facilitate consistent interforest comparisons. Water values are discussed on pg. 8-25, FEIS.

Topic #B069

Water values of \$59/acre foot are too low.

Response #B069

Refer to Response #B068.

Topic #B070

What is the expected timber yield from riparian zones in the preferred alternative?

Response #B070

The expected yield from riparian areas will be nominal. Please see response #H001, #H004, and Appendix F, Final Riparian Area/Stream Management Zone Guides in the Plan

Topic #B071

Alternative A diminishes the recreation opportunities which reduces tourism. It ignores the long-term effect on county employment in lieu of short-term profits. Tourism supports more jobs than timber, and by stifling recreation growth you stifle economic potential.

Response #B071

The Preferred Alternative would meet projected demand for developed and overall dispersed recreation demand over the entire planning period [See Chapter 2, Section E (Alternative A)]. The Forest Service considered the above mentioned relationships (documented in Chapter III, Socio-Economic section, of the Forest Plan) and concluded that the management approach represented by the Preferred Alternative is that which maximizes Net Public Benefits. These consequences are analyzed in Chapter 4 of the FEIS.

Topic #B072

Wilderness can be maximized with little reduction in economic efficiency. Willingness to pay scenario is faulty. FORPLAN cannot adequately address the recreation dollar potential.

Response #B072

The Forest uses nationally established 1985 RPA recreation values as directed by the Regional Office. These are subject to Regional modification upon the availability of superior information. The theoretical 'willingness to pay' framework is an evaluation process used to estimate recreation dollar potential. Average willingness to pay values used in the analysis are given by recreation category (wilderness included) in Appendix 8, and these are obviously significant. The FORPLAN model, which incorporates these values, effectively provides economic information to Forest planners for use as part of the alternative evaluation process. We believe the proposed mix of wilderness and other resource outputs maximize net public benefits.

Topic #B073

Why is road construction being allocated in a different way under the alternatives than in the benchmarks?

Response #B073

Roading schemes depend upon the objectives of specific benchmarks and alternatives. To the extent that there is intended variance among these objectives, the roading schemes will differ.

Topic #B074

Budget cuts are planned to occur primarily in timber, while recreation is emphasized. This is unfortunate because timber investments contribute positive Net Returns to Treasury. Alt A shows B/C ratio of 11 for recreation, but represents 'willingness to pay' values rather than real dollars. The government won't receive Net Returns comparable to the Returns generated by timber.

Response #B074

Rather than maximizing profits or revenues, the major goal of the Forest Service is to meet multiple use objectives for all resources in an economically efficient manner.

Topic #B075

RPA goals evolved under the same planning process the TNF currently uses, and these have already gone through an environmental review process. Why wouldn't these goals, identified under Alternative C (and assumed to be possible) be the minimum goals of any National Forest management plan? Actual implementation would be controlled to a certain extent by Congressional budgetary decisions, but this is irrelevant to their value as potential, sustainable goals.

Response #B075

The RPA goals were initially developed using broad national inventories and projections, recognizing that forest-specific differences would exist. Consequently, the intent of planning at the Forest level was to use National guidelines while incorporating the local issues and resource concerns into the plan. In addition, this gives Forest officials the opportunity to compare actual Forest conditions with the National estimates. We acknowledge the usefulness of the RPA goals and apply these when feasible

Topic #B080

Plan fails to use the most current and accurate information in database. Specifically:

1. Price trends from arbitrarily selected time periods of maximum economic growth and maximum timber prices.
2. Inadequate database for spotted owl yield tables.
3. Statistically unreliable (standard error greater than 0.20) yield tables that predict growth rates in understocked stands 30% over historic rates.

Response #B080

1. Price trends were not arbitrarily selected (See #B060, #B043) The time periods selected matched those used in the RPA analysis. This was done to maintain consistency among forests. In actuality, price trends have little effect on determining land allocation and resource production levels in the planning process. This is because Forest Service planners are concerned with maximizing net public benefits, rather than present net value. The interdisciplinary planning team, in coordination with the public involvement process, determines land allocations and resource production levels.

2. True It is realized that absolute empirical data which determines the point at which regenerated

lands become suitable as spotted owl habitat is unavailable. The database and yield tables in the DEIS have been revised in the FEIS to reflect the best available information. The database will continue to be amended as more current information is acquired.

3 Overall Forestwide inventories meet national requirements in that the standard error is less than 10 percent ($SE < .10$). In addition, there are no performance standards or requirements by strata. Predicted growth is based on regression estimators. When concerned with mean measurements, as with all measures of central tendency, certain individual stands will be above the average (regression estimator) and certain stands will be below the average. The weighted average for all stands does match the regression coefficient and this is supported by historical growth rates

Topic #B081

Plan fails to provide a broad range of alternatives. No alternatives manage the Forest without planned clearcutting, herbicide application, new road construction, livestock grazing or cutting of old growth. Also, no alternatives protect roadless areas from road construction and timber cutting

Response #B081

An alternative has been modeled which avoids using herbicides, and minimizes new road construction, range production, and impacts on old growth. In addition, this alternative does not have large clearcuts, and does not impact any roadless areas. This proposal has been investigated in detail and the results are presented in the FEIS. Please see topic #P052.

Topic #B082

Plan fails to provide the most cost efficient combination of management options. Alt A & H provide same timber outputs with significant acreage differences

Response #B082

The FORPLAN linear programming based model is designed to determine the optimal allocation of limited resources (TNF) among competing demands, in a cost efficient manner. Given the TNF management goals and objectives, and given the alternative theme and management prescription variances, this model does in fact provide the most cost efficient combination of management options. Differences in land and resource allocations between alternatives are expected.

Topic #B083

Plan fails to assess the costs associated with activities present in all alternatives: road building, even-aged management, grazing, herbicide use, reforestation failures, and fire management. The value forgone (costs) of the following activities must be clearly displayed in terms of the resources: Soil productivity, diversity, riparian areas, and other non-commodity resources.

Response #B083

Each alternative was designed to combine resource uses and synthesize management prescriptions for the purpose of achieving various desired resource management directions, outputs, goals, or emphases. Estimates of all costs associated with specific alternative implementation methods were incorporated in the proposed budget figures (summarized by decade in table 2 21, FEIS).

With the exception of the Current Situation Alternative, fire management strategies would not vary between alternatives (Section E, Chapter 2). As annual fire suppression costs are extremely variable, incorporation of this information would not significantly influence the analysis

Opportunity cost representations are inherent in and reflected throughout the general alternative array in Chapter 2. Specifics can be extracted from the data presented in tables 2 16- 2.26

Topic #B084

Plan fails to address economic effects, direct benefits, nonmonetary benefits, and employment of each alternative on local government.

Response #B084

The incorporation of RIMS multipliers into input/output models allows forest service professionals to estimate and evaluate the various employment consequences associated with each alternative on local 'zone of influence' areas. Government employment considerations and revenue flows are included in this analysis. Chapter 4 (FEIS) examines the environmental consequences associated with the implementation of each alternative

Topic #B085

Plan fails to analyze the use of other cutting methods to meet alternative objectives.

Response #B085

Selection of treatment methods is based on resource objectives, environmental effects, treatment efficacy, and costs. The Tahoe National Forest is implementing group selection harvesting methods on each of the five TNF districts. Appendix L (EIS) demonstrates economic reasons for even-aged timber management.

TOPIC #B086

Plan makes no analysis of biological, social, economic, or environmental design consequences of timber and range type conversions.

Response #B086

Even-aged management practices do not generally represent timber type conversions. Forest diversity considerations include the effects of even-aged management. Please refer to #G045.

Topic #B087

We disagree with the decision to not recognize increases in dispersed recreation in the MKV benchmark analysis because dispersed recreation has no market value. While it is true recreation has no market value, it is also true that % is positively affected by the activities that increase MKV outputs. The projected physical changes in dispersed recreation should be recognized -- other outputs with no market values are not and factored into the PNV analyses.

Response #B087

By definition, the MKV benchmark excludes nonmarket values for PNV analysis. Other benchmarks take into consideration your concerns for valuing and recognizing affects on dispersed recreation.

TOPIC #B088

We question 'willingness to pay' values for recreation.

Response #B088

Recreation and wildlife and fish user day values are based on a national survey of travel cost and contingent value recreation studies conducted by the Forest Service for the 1965 Resources Planning Act evaluation. These values are used in order to provide general indicators of resource relationships. Also, see B072.

Topic #B089

Plan does not disclose how economics of timber management in high elevation areas, especially uncrossed red fir forest, maximizes net public benefits.

Response #B090

The net public benefits of proposed timber management activities cannot be determined solely by the economics (forest and soil rent values) associated with specific areas, such as, high elevation unc-

crossed red fir. Even if the forest and soil rent values of all the timber management activities proposed for an analysis area are negative, managing this analysis area with some of these activities may increase the PNV and/or net public benefits of an alternative when forestwide management guidelines or even-flow timber harvest constraints are specified. This result has been well documented in professional forestry journals. This subject is discussed in Appendix B of the FEIS, section I., Stage II Analysis.

FIRE, LAW ENFORCEMENT

Topic #F001

The final Plan should put more emphasis on fire and other resource protection and fully explain how adequate fire protection will be maintained under the chosen Alternative. Plan should include 'Coordinated Resource Management Planning' to provide protection of both Government and private lands (especially with checkerboard ownership pattern) and identify additional fire and medical services needed.

Response #F001

Fire protection is a very important aspect of managing natural resources and it is being given significant emphasis in the Plan primarily through Standards & Guidelines and Prescriptions

The Forest Service provides wildland fire protection on both National Forest System and private lands as directed by Regional and National policies, Forest-wide standards and guidelines, prescriptions for specific management areas, and the Cooperative Fire Protection Agreement Between Regions Four, Five, and Six, Forest Service USDA and State of California, Department of Forestry. These policies and guidelines determine how fire management programs will be implemented and maintained and what obligation exists to adjacent private landowners.

The preferred fire suppression strategy is control with quick, aggressive initial attack except in specific management areas where the contain strategy is authorized and appropriate. Due to intermingled private lands and/or areas of continuous fuels the confine strategy is not appropriate except for those areas where analysis shows that it could meet resource and management objectives and be confined to National Forest System lands.

The most efficient Fire Protection Organization was determined by utilizing the National Fire Management Analysis System (IAA2.2) which is a computerized program which calculates the most efficient fire protection organization based on cost of the organization plus Net Value Change.

In addition to Tahoe National Forest fire protection forces we have access to additional agency forces such as the California Department of Forestry and Fire Protection, Nevada Division of Forestry, Bureau of Land Management, numerous local Fire Districts, and adjacent National Forests. These forces are intermingled or adjacent to the Tahoe NF Protection

Area and expand the protection capability within this area by four to five times. To provide better coordination and more efficient use of these resources the Forest is joining with the Nevada-Yuba-Placer Ranger Unit of the CDF&FP in joint Emergency Command Center at the Grass Valley Air Attack Base.

Topic #F002

FS should coordinate w/ Nevada County in establishing and maintaining appropriate zoning to limit homes in Forest lands and high fire danger areas.

Response #F002

The need to work with counties is not limited to Nevada County as Placer, Plumas, Sierra, and Yuba Counties are also involved. We and CDF&FP worked with all counties over the years in an attempt to, at minimum, bring 'fire safe' requirements into developments on private lands within the Tahoe NF Fire Protection Boundary. For the past several years the Forest Service has been a key principal in a national effort to effect 'fire safe' practices and provide for a 'defendable space' for developments on private lands in the wildland environment.

As development continues in wildland areas and in areas of high fire danger there will be a continuing need for county government to develop zoning and 'fire safe' requirements to better meet the fire protection needs of both the wildland and the developments. The Forest Service will continue to work with the affected counties to encourage good zoning and 'fire safe' requirements, but in the final analysis it is a local authority and responsibility unless there is additional state or federal legislation.

Topic #F003

Fire Prevention activities do not make any sense in the Granite Chief Wilderness Area, given the sparseness of Forest and low fuel loads.

Response #F003

The fire prevention effort on the Tahoe NF is targeted at preventing large, damaging fires. As a result, most fire prevention efforts are directed at areas of high fire hazard during periods of high fire danger; however, good fire prevention practices are mostly a result of attitudes and personal awareness and discipline. As such, the basics of fire prevention are important in all areas of the Forest.

Fire, Law Enforcement

Also, the Granite Chief Wilderness Area does have significant blocks of continuous fuels and during periods of high fire danger wildland fires can and do pose a threat to the wilderness values, wilderness users, and resources outside of the wilderness area

We can agree that the Granite Chief WA requires a lower level of fire prevention activities than do the high hazard areas on the Forest, but do not agree with the statement that, 'fire prevention activities do not make any sense in the Granite Chief Wilderness Area'.

TOPIC #F004

Revamp and increase the early lightning detection system and air supported firefighting arm. Use volunteer civilian summer patrols to increase 'early lightning detection.'

Response #F004

Ongoing advances in technology have refined both lightning prediction and detection systems which are available and used on an as needed basis. Through the use of satellite imagery it is now possible to detect and plot cloud-to-ground lightning which can and does start fires

The Forest Service and other cooperating agencies have an air program and organization that very efficiently provides 'early lightning detection'. Use of 'volunteer' air patrols is usually not practical as pilots and aircraft must meet stringent requirements for safety and operational reasons. The public does provide continual assistance, however, by notifying us of any fires that they observe.

Topic #F005

Modeling has not been done to take into account the increase in human caused fires due to increased road construction. Should develop a coefficient to do this.

Response #F005

Our historical data on the Tahoe NF does not show a direct correlation between numbers of human caused fires and the amount of increased road construction. The fluctuation in numbers of human caused fires over the years appears to be most closely associated with the length and severity of the fire season and to some extent numbers of people in an area, but even those are not direct correlations.

About one-half (1/2) of the human caused fires occur on private lands which only account for one-third (1/3) of the Tahoe NF Fire Protection area.

In summary, based on our fire prevention records, the ability to close many of the newly developed roads, and the fuel treatment practices along roads we do not consider a coefficient practical or necessary.

Topic #F006

Need additional information on:

1. Fire prevention and control - increased costs above and beyond average fire costs of fire prevention and control attributable to fire hazardous forest plantations.
2. DEIS 3.69 - "The threat of large, damaging fire in extensive plantations and precommercial thinning areas will require proper fire hazard reductions to ensure adequate protection."
3. Nature of "Proper Fire Hazard Reduction" and costs.

Response #F006

Whether or not the cost to prevent and control fires in plantations is or will be higher than outside of plantations is problematical. The computer model (IAA2.2, National Fire Management Analysis System) takes into consideration the fuel type and the resource value when determining the most cost-efficient fire protection organization.

We also know that our ability to protect these plantations is directly affected by how well we treat the residual slash and vegetation after harvesting and prior to planting. The better we clean up the area prior to establishing the plantation the less expensive and more effective will be the protection. In fact, quite often we use plantations that have very low ground fuel loadings as good control points in fire suppression. This is what is meant by the statement from the DEIS (369) which references the need to do the needed "hazard reduction" to adequately protect these plantations.

The 'nature and costs of proper fire hazard reduction' varies from site to site. The 'nature' is referenced in the Forestwide Standard & Guidelines and Management Area Prescriptions. Costs vary significantly due to differences in fuel loading prior to harvesting, volume harvested, species harvested, amount of brush and/or hardwoods on site, and

other resource values to be protected during fuels treatment Adequate fuels treatment in conjunction with protecting other resource values ranges from a few hundred dollars and acre to over \$800/acre. These costs are financed by the revenues from the harvested timber Whenever practical these fuels are utilized for fuelwood or other products in lieu of disposal on site.

Topic #F007

We don't need a fire break bad enough to cut all the trees out

Response #F007

Usually it is not necessary to cut all of the trees to create a 'firebreak' or a 'fuelbreak.' In fact, when we create a 'fuel break' which is done prior to a fire starting and placed in a strategic location we only thin the trees out and retain good shade cover to reduce the amount of brush and small trees that grow back.

On the other hand, when 'fire breaks' or 'control lines' are constructed on a large, fast moving fire it is quite often necessary to remove all vegetation including trees in strips from 1 to 10 bull dozer blades wide (12-100 feet) Again the placement and size of a given control line on a large fire will be determined by the personnel managing the fire in consultation with the Line Officer.

Topic #F008

Use (and in some cases increase) the amount of controlled (prescribed burning) to:

1. Prevent major fires (prevention has diminishing returns).
2. Promote growth.
3. Release competition from less valuable species.
4. Eliminate genetically inferior stock and poorly stocked stands.
5. Preserve meadow systems within the Headwaters Basin, Chickering Reserve, North Fork Association, and Onion Creek Experimental Station.

6. Maintain low successional stages in RNA's.

Response #F008

The Plan allows for and retains the option to use prescribed fire where needed and practical for all of the reasons listed above. To date prescribed fire has been used primarily to reduce the fire hazard, prepare sites for planting, and manipulate wildlife habitat. Use of prescribed fire for other purposes has been primarily limited due to availability of funds, land ownership, and in some cases lack of expertise and/or scientific data.

Topic #F009

Do not prescribe burn because:

1. It causes air pollution - degrades air quality
2. Need to re-cycle organic material for soil productivity
3. Too dangerous: may escape.
4. Pile slash, but leave for wildlife, or chip and scatter, or lop to 18'.
5. Increases fire stimulated brush/shrub seedlings.
6. Don't want prescribed burning near our cabin on Canyon Timber Sale.

Response #F009

All of the above are effects or potential effects of prescribed burning Each are considered during the project environmental analysis in compliance with NEPA stage prior to making a decision to conduct prescribed burning.

Air pollution tends to be a short term effect and we follow local Air Pollution Control regulations and our own Smoke Management Regulations to prevent or minimize the effects on people Usually we are successful, but there are times when weather predictions do not materialize and the smoke does not dissipate as expected.

The recycling of organic material back into the soil is important and there is a Forestwide Standard & Guideline that establishes minimums to meet this need. To meet these minimums we will be burning less total acres than in the past and in many cases less material on the acres that we do burn.

Fire, Law Enforcement

Yes we have had escapes from our prescribed burning projects; however, less than 1/2 of one per cent escape and fewer than that cause resource damage or are costly to suppress. We take extraordinary precautions in our prescribed burning and are very successful in preventing their escape.

We use all of these practices at times and will continue to do so, but lopping to 18' in most situations will not reduce the fire hazard adequately and quite often will not meet reforestation needs. Chip and scatter is used, but is very expensive and is for the most part limited to slopes under 30%. Hand piling is also extremely expensive and leaving all of the piles would not meet fire hazard reduction needs.

Fire does stimulate those brush species that are perpetuated by fire and where there is a good option we do not use fire in these areas; however, quite often the only good option is the use of fire to eliminate the slash and standing brush in prepare the site for planting and then follow up with other methods to treat the brush sprouts. In the case of wildlife habitat we utilize the ability of the brush to sprout to our (and the wildlife's) benefit.

As stated earlier we take all reasonable precautions to prevent our prescribed burning from affecting others; however, there are times when the best laid plans do not work perfectly. If we did not burn based on the closeness of houses (whatever close is) on the Tahoe we would be overly restricted due to the land ownership pattern. In addition, proximity is quite often not as important as topography, wind, and other atmospheric conditions.

Topic #F010

Need to know the separate and cumulative impacts of slash piling for fuel reduction and of fuels treatment and burning in SMZ's.

Response #F010

We do not have the data to determine the cumulative impacts of these treatments, but have developed Forestwide Standards & Guidelines and Specific Area Prescriptions to minimize these impacts on specific sites.

In regards to the impacts of slash piling to soil disturbance, erosion, and compaction there is a Forestwide S&G that addresses this in terms of effective soil cover and per cent compaction. These minimum

requirements must be met for all activities, not just slash piling.

There is also a Forestwide S&G which implements the Forest's SMZ Guidelines. These guidelines recognize the past problems of fuel treatments, including burning, in the SMZ's and set standards that must be met during these operations.

Topic #F011

I object vigorously to the burning of the 'slash piles' before the general public is allowed to get what is useable for firewood.

Response #F011

Our intent is to provide material for firewood as opposed to disposal if at all practical. In some situations, for reasons such as timing, location, steepness of slope, etc it is not practical. We continue to strive to increase our utilization of slash piles and other left over woody material.

Topic #F012

Do not limit natural fire to Wilderness Areas. Inventory all areas of the Forest to determine where and when it can be used. Return to a natural fire ecosystem. Allow small natural fires to burn themselves out in Granite Chief WA. Re-establish natural fire cycles through a series of cool, prescribed fires to help maintain ecological diversity and long term productivity of Forest ecosystems.

Response to #F012

In developing the use of control, confine, and contain strategies the Forest recognizes the usefulness of 'natural fires' in areas for which resource and management analysis have been done. If the option to allow certain fires to burn themselves out be utilized, it would be done so in accordance with approved fire management plans and within the boundaries of fire danger ratings systems. Although the contain/confine strategy is not limited to wilderness areas, its use is very limited on the Tahoe due to land ownership patterns, high resource values, and other potential suppression problems.

The practice of using 'natural' fire in a complex management environment is expensive, requires a high level of expertise, and faces significant political implications; however, it is a valid management tool and the option to use it is retained in the Plan.

*Fire, Law Enforcement
be to ensure whenever possible that forest users
have an enjoyable experience.*

Topic #F018

The LE discussion (DEIS pg. 3.45 & 3.46) identified two serious problems (enclaves of lawlessness and users involved in illegal activities), but makes no attempt to present solutions.

Response #F018

The Forest is taking aggressive action to resolve illegal activities on National Forest lands. In the past five (5) years the Forest has increased from one Special Agent to four (4) and has an additional four (4) personnel that are trained and authorized to carry firearms. Since much of the lawless enclaves and illegal operations are based on private lands there is a limit to what the Forest Service can do; however, since much of the activity spills over onto National Forest lands we cooperate closely with the various County Sheriffs.

The Forest Service nationally is stepping up its law enforcement capability especially in the area of drug enforcement. The Tahoe is in line with this expansion.

The increase in the amount and magnitude of law violations occurring on the Forest requires professionally trained law enforcement personnel. To meet these requirements a law enforcement program is being developed as stated on page III, 113 of the Forest Draft Plan. The objective of this program will

Topic #F019

Suggests closing all logging roads not being used to reduce LE problems such as woodcutting, vandalism, and breaking into cabins. Pilfering is prolific on weekends and deer season (fuelwood). Post a Truck Stop (Inspection Station) at Highway 89 and Fibreboard Road as there is no phone for 20 miles.

Response #F019

The closing of all logging roads is not feasible and unenforceable. The problems mentioned occur both on National Forest lands and private lands. As shown in response #F018 we recognize the increase in law violations, know that law enforcement is an integral part of the overall management of the Forest, and are developing a law enforcement program and capability to better meet the law enforcement challenge.

During peak seasons and periods of high use, patrols and enforcement are targeted for areas known to be vulnerable to vandalism and lawlessness. The junction of Hwy-89 and Fiberboard Road is currently and will continue to be used as a check point for various needs. Lack of utilities such as telephones is a fact of life throughout the Forest and may never be adequately resolved.

GENERAL/MULTIPLE USE

Topic #M001

The TNF should be managed for multiple use but with a greater emphasis on the protection of wildlife habitat, watershed and water quality, scenic quality, soils, and recreation opportunities. Timber production should be managed only on those lands where impacts to the above resources do not occur. Political and economic pressures should not dictate how resources are managed; the needs of the forest should.

Response #M001

The final plan provides for greater emphasis on amenity resources including wildlife habitat, watershed, soils and streamside protection, and variety of recreation experiences. Timber production will still be an important role of the National Forests yet with revised standards and guidelines, impacts to other resources should be minimized. The Forest Service is required to analyze the economic effects of all alternatives. Since the Forest Service reports to the current Presidential Administration and follows Congressional direction, it is influenced by the political process.

Topic #M002

The Forest Service should preserve public land

Response #M002

National Forests were not created to preserve public land. The Forest Reserves, which later became the National Forests, were created to reduce the damage to public lands from the theft of timber, extensive overgrazing, and major fires that were occurring. The purpose of National Forests is to provide the American public with a source of timber, grazing areas, recreation areas, water for downstream and forest needs, and wildlife habitat. National Parks were created and are managed to preserve public land.

TOPIC #M003

Tahoe National Forest should be managed for multiple use. A well managed timber management program should be the main emphasis of multiple use because it will benefit other resources, and the loss of wood from decay and fire can be reduced. Additional land should not be locked up for amenity values. The largest land base should be maintained for multiple use.

Response #M003

The National Forests are mandated to provide a mix of uses that best meets the needs of the American public, now and in the future. Timber is one of the uses which National Forests provide. Other important uses include recreation, wildlife habitat, watershed protection, etc. These resources are also important to the American public and need to be provided. In some areas of the forest, providing amenity resources is the main emphasis due to the nature of that area and the resources it contains.

Topic #M004

The National Forests are very important resources, and allocation of those lands should be conservative since scientists and professional land managers don't have all the answers yet. Once the land is damaged it takes a substantial period to recover.

Response #M004

We agree. However, we will never have all the answers to all the questions. In the meantime we can manage conservatively while providing resources such as timber, grazing, and recreation opportunities.

Topic #M005

National Forests can provide both amenity and commodity resources as well as provide greatly needed jobs for the local community. Ecological needs must balance commercial needs. Multiple use can provide the recreation, wildlife, and watershed values while also providing timber and grazing areas for consumption by the American public.

Response #M005

Providing the right balance of commodity and amenity resources is the aim of the final Forest Plan.

Topic #M024

A forest should be managed for local needs and not political pressure. The value of a National Forest should not be measured in dollars or political expediency.

Response #M024

The National Forests are managed by scientifically trained employees including foresters, hydrologists, wildlife biologists, and soil scientists through a polit-

ical process. The National Forests were created to provide for National needs, including the needs of citizens in the local and distant regions of the United States. These needs are expressed by direct communication with the managers of the National Forest System as well as through our political process. The budget is Congressionally determined which designates the funding for each of the resources of the Forest. Laws affecting the National Forests are passed through the Congressional and Administrative functions.

Topic #M025

The Forest should be managed in an economic manner using all scientific techniques and knowledge. It should not be managed politically.

Response #M025

Highly trained professional Forest Service and contract employees manage the National Forest. State of the art techniques and new research are used in its management. See Topic M024 for comment on political concerns.

Topic #M026

Forest issues should be voted on by the public.

Response #M026

Since a National Forest is composed of complex ecosystems, the management requires trained foresters, hydrologists, wildlife biologists, economists, archaeologists, and other specialists. The public's views are sought during the initiation of new projects or plans; however, votes are not counted for or against a particular proposal but the range and intensity of the public's viewpoints are taken into account by the Decision Maker. The public does in a round about way vote for issues regarding the National Forest system through the election process. National Congressional leaders pass laws and the budget that directly affect the management of each National Forest.

Topic #M027

The public is not knowledgeable about Forest management, and public comments should not be considered, especially when the public did not read the documents they commented on. The Forest Service should have educated people more.

Response #M027

Although the general public may not have all the scientific facts that are needed to manage a National

Forest, they do have important ideas and contributions to make regarding the management of public land. The better informed folks are, the more specific their comments can be; however, even an uninformed person has thoughts and feelings that are valid since each citizen is a co-owner in the National Forest System. Nine public meetings, 5 open houses, 3 public hearings, news releases, slide-tape programs, and an overview of the plan were developed to give interested individuals the chance to be more informed of the Forest Plan. We agree that there is more to do to inform the public regarding the management of the National Forest as well as to inform the Forest Service about the various publics that depend on the resources of the Forest.

Topic #M028

The public is confused about which alternative to endorse. The plan is very complex.

Response #M028

The plan is very complex and requires a lot of study. In an attempt to help everyone better understand it, 9 public meetings, 5 open houses, 3 public hearings, and many other interest group meetings were held. News releases, slide-tape programs, and an overview of the plan were developed to aid folks in the evaluation of the documents.

Topic #M029

The Forest is very popular with the public as a whole and all want to have an impact on the Final Plan and management of the Forest.

Response #M029

Over 12,000 letters that were received on the draft plan indicate that there was and is a lot of interest in this Forest. The comments in each letter were read, digested, acted upon and answered in this document. Public views, Congressional laws, and Forest Service policy are all responsible for making a difference in how the Forest is managed and the changes between the draft and the final plan.

TOPIC #M030

Put small plots of land in the supervision of members of the public to plant, groom, as personal property with the option to sell the timber.

Response #M030

This is beyond the scope of the plan and would require legislation to initiate.

Topic #M031

There should be opportunities sponsored by the Forest Service for the public to become more aware and knowledgeable about forestry, land management, and nature. Educational study plots displaying old growth, middle growth and early growth should be maintained. One possibility for this would be in the I-80/ Bowman Lake area.

Response #M031

A greater emphasis is being placed on education and interpretation of The Forest and Forest management practices. This is not a part of the plan but is reflected in project specific environmental analyses in compliance with NEPA, the Forest Workforce Management Plan and commitment by the Forest Management Team.

Topic #M032

The Forest Plan and the planning process should remain flexible and adaptable to changing consumer needs and world market developments.

Response #M032

The planning process was designed to stay flexible and adaptable. Regulations call for the plan to be revised every five years and updated every ten to fifteen years but not sooner than every 5 years. The plan can also be amended when needed.

Topic #M033

The Plan violates 36 CFR 219.6(k) by failing to coordinate planning activities with the owners of private residences, and summer homes on private land intermingled with National Forest System lands. Planners failed to thoroughly inform, and request comment from holders of special use permits within the Forest.

Response #M033

The regulations state that planning activities should be coordinated to the extent practicable with owners of lands that are intermingled with National Forest System lands. The Tahoe National Forest has almost 400,000 acres of private land within the boundary of the Forest. It was not deemed practicable to individually notify all private landowners in the Forest. We agreed that the landowners and special use permittees would be notified as were the general public through the media, public meetings, and mailings to those on the Forest Planning mailing list.

The public was actively consulted during the initial scoping phase and throughout the 6-year planning process. See Appendix A for overview of public participation activities, (Initial Scoping, 1979, and Consultation With Others). Over 150 news items addressing the planning process appeared in local and distant newspapers, journals, and interest group newsletters during the public comment period for the DEIS and Proposed Forest Plan.

GRAZING

Topic #G001

Do not permit grazing in riparian and mountain meadow areas because of the negative impacts caused by grazing.

Response #G001

Livestock grazing in riparian areas can be conducted in a manner that will maintain and/or enhance the riparian-dependent resources. Grazing conflicts with other resources will be resolved on a project-by-project basis through a site specific allotment management plan. We have developed Standard and Guidelines 33 and 46 to provide direction to resolve these conflicts.

Topic #G002

The Tahoe National Forest needs to develop standards and guidelines for grazing use in riparian areas.

Response #G002

We agree Standard and Guidelines 33 and 46 have been developed to provide direction for grazing use in riparian areas. See response #G001.

Topic #G003

The Tahoe National Forest needs to construct erosion control measures and riparian fencing to correct the livestock damage in Austin Meadows of the Pinoli Management Area.

Response #G003

The conflicts in the Austin Meadows area have been identified and are currently being resolved through a site specific allotment management plan. See Response #G001.

Topic #G004

The Tahoe National Forest should report the amount of AUM's generated by the riparian areas.

Response #G004

We have records (AUMs by vegetation type) for each allotment. These records are located in the planning files at the Ranger District and Supervisor's Offices.

Due to the amount and size of these records, they were not included in the planning documents.

Topic #G005

The Forest should remove lodgepole from the meadows to improve them.

Response #G005

Lodgepole removal from meadows must be evaluated on a case-by-case basis through the allotment management planning process to ensure that this is an environmentally sound practice and all resources involved are fully considered.

Topic #G006

Livestock grazing does not impact all areas evenly, most of the environmental impacts of this practice occur in the riparian ecosystem. When the average condition of the range is 'fair', it implies that the condition of the highly impacted riparian areas is poor or declining.

Response #G006

We do not agree with your analogy pertaining to range condition. When the forest addresses the range condition issue, it is described as the "majority" of the range being in fair condition. The term "majority" does not mean average. Past condition studies on the Forest riparian and meadow areas show the majority of these areas to be in a good condition. Specific areas in less than satisfactory condition will be treated on a case-by-case basis.

TOPIC #G007

The TNF's meadows, streamside areas and forests are already at or beyond their carrying capacity for domestic livestock, otherwise the range would be in excellent condition.

Response #G007

See Responses #G001 and #G006.

Topic #G008

Do not reopen the White Rock Allotment to grazing because of the sensitive soils and Lahonton cut-throat trout in that area.

Response #G008

If the White Rock Allotment is reconsidered for grazing, we will conduct a full environmental analysis in compliance with NEPA, which would be appropriately documented. This analysis would determine if that area is capable of the grazing use; all other resources will be fully considered before allowing the grazing use.

Topic #G009

How is water quality impacted by increased grazing on multiple ownerships?

Response #G009

Only those private lands that have had the administration for grazing waived by the private land owner or the permittee to the Forest Service are included in the grazing allotment. The waiver allows the Forest Service to control the grazing season, number and class of livestock, and livestock distribution on those private lands. Water quality will be maintained regardless of the ownership because those increases will be fully considered through the allotment management planning process and will be monitored according to the direction set forth in Standard and Guideline 32 in the Forest Plan.

Topic #G010

Grazing pollutes the water with Giardia.

Response #G010

Giardia is transported by all warm blooded mammals, including not only livestock, but beaver and humans as well. These intestinal parasites may be present regardless of whether livestock are permitted to graze or not.

Topic #G011

Grazing should be restricted in Perazzo and Webber Meadows because of the willow flycatcher habitat there.

Response #G011

If grazing is noted to be in conflict with the willow flycatcher through our monitoring, the grazing use will be adjusted to reflect the needs of the willow flycatcher.

Topic #G012

The DEIS violates 36CFR 219.20 by failing to disclose and assess possible resource use conflicts between domestic livestock and wild animal populations.

Response #G012

The requirements set forth in 36CFR 219.20 has been met through the Standard and Guidelines 32 and 33 of the Forest Plan which requires the Forest to protect, utilize, improve, inventory, and evaluate the range resource. Wild animal populations are part of that evaluation and are fully considered. For further explanation, refer to Response #G014.

Topic #G013

Livestock grazing creates negative effects on fish and wildlife.

Response #G013

Through the allotment management planning process, wildlife and fish needs are fully considered prior to the amount of forage allocated for livestock. This forage allocation is then continually monitored as identified in Response #G005 to ensure that the proper allocations were estimated and the proper management is carried out.

Topic #G014

The Forest Plan should state how many animal unit months (AUMs) have been allocated for wildlife.

Response #G014

AUM allocations for wildlife and other resources under the current situation are made on an allotment by allotment basis through the environmental analysis in compliance with NEPA. These allocations are part of the planning files located either on the Ranger District or in the Supervisor's Office. For areas not covered by existing data, outside existing allotments, and transitory range, similar forage production values were extrapolated from known sources. Forage values from those areas were adjusted for wildlife needs, soil considerations, forage palatability differences, and distribution of strata. These coefficients are located in Appendix E of the Tahoe National Forest's Analysis of the Management Situation (AMS).

Topic #G015

We disagree with the statement that committing forage to domestic livestock makes it unavailable for wildlife.

Response #G015

See Response #G013.

Topic #G016

How does 'fully' utilizing key habitats for livestock forage provide for a 25% increase in deer numbers?

Response #G016

See Response #G013.

Topic #G017

There is no discussion of range condition or a definition of what range condition is in the Forest Plan.

Response #G017

A discussion of the range condition can be found in the Affected Environment Chapter of the EIS. The definition for range condition can be located in the Glossary of the Appendix.

Topic #G018

The DEIS violates 36 CFR 219.20 by failing to disclose direction for the rehabilitation of ranges in an unsatisfactory condition.

Response #G018

Through Standard and Guidelines 32 and 33 and practices D1 through D7 in the Forest Plan, we can meet the intent of 36 CFR 219.20 by providing direction to evaluate, monitor and improve the range resource. By placing the range resource under improved grazing systems (deferred grazing, rest rotation, etc) along with the proper range improvements to facilitate the grazing systems, these areas can be rehabilitated.

Topic #G019

How can the Forest propose increased grazing on lands considered to be fair in condition or graze livestock on lands in poor condition?

Response #G019

Range lands considered in unsatisfactory ecological condition will have the highest priority to be improved through proper range management. AUM increases will only result after it is determined through the allotment management planning process that is environmentally and economically sound to do so.

Topic #G020

A grazing plan and environmental analysis should be drawn up for all grazing use on the Tahoe National Forest.

Response #G020

We agree. Each allotment is managed by its own specific management plan, which identifies forage capabilities, number and class of livestock, season of use, management strategy, management system, range potential opportunities, and problems or conflicts to be resolved. Updates and revisions of the range allotment management plans are completed through the allotment management planning process. This information can be found in the Summary of the A.M.S. Chapter of the Forest Plan.

Topic #G021

Does intensive management of the grazing resource imply intensive use?

Response #G021

No, intensive range management is one of several range management strategies that is employed on the Tahoe National Forest and is defined in the Nation's Range Resources, Forest Resource Report No. 79, December 1972. The definition for what intensive range management strategy is located in the Glossary of the Appendix Volume. Improved grazing systems under an intensive management strategy may reduce AUMs as well as increase them.

Topic #G022

The Tahoe National Forest needs to monitor the cumulative impacts of cattle grazing.

Response #G022

Cumulative impacts of cattle grazing are monitored as directed by the Forest Plan, allotment management plan, and the Forest Service Manual and all

Grazing

resources will be protected through proper management of the range resource.

Topic #G023

The Tahoe National Forest should propose no grazing increases, less intensive range management, and confine grazing to protect watershed, back-country recreation, wildlife, soils and sensitive plant & animal communities.

Response #G023

See Response #G014.

Topic #G024

Livestock should not be allowed to indiscriminately graze on the Forest.

Response #G024

See Response #G020.

Topic #G025

Increases in grazing does not give any consideration for wildcrafters.

Response #G025

Needs of wildcrafters may not be fully known by Forest Service personnel. Please contact your local district offices or Forest headquarters so we can consider your needs in the planning process.

Topic #G026

Grazing will destroy medicinal plants.

Response #G026

Grazing systems are designed to maintain or enhance plant communities depending on the management objectives desired for a specific plant community. Managed grazing does not destroy plants. If grazing is permitted in an area where medicinal plants occur, portions of these plants may be removed by grazing during that season depending on the individual plant's palatability. However, the health and vigor of all plants are maintained.

Topic #G027

What are the cumulative impacts of grazing on historic, prehistoric, archaeological, and other cultural resources?

Response #G027

Livestock do not threaten or damage these sites. All historic, prehistoric, archaeological and other cultural resources are protected by the American Antiquities Act of 1906, the National Preservation Act of 1966, and the Archaeological Resources Protection Act of 1979 for all management activities, i.e., grazing. Cultural resources are considered during the allotment management planning process.

Topic #G028

Grazing should be eliminated from the National Forest System lands.

Response #G028

Grazing on the National Forests has occurred since the early 1900s. For many permittees, grazing on National Forest System land has provided several generations' livelihood. To manage this use, Congress has passed many acts defining the benefits, administration, and protection of our National Forests. One of the most important of these is the Multiple Use Sustained Yield Act of 1960, which established that the Forests would be 'administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes'. A key component of the Act stated that the resources would be managed; 'multiple use' means the management of all the renewable surface resources of the National Forests so that they are utilized in the combination that will best meet the needs of the American people.'

Therefore, grazing is a valid use of the National Forests, and must be managed to meet the needs of the American people.

Topic #G029

Domestic livestock destroy the land

Response #G029

We disagree. Managed livestock grazing does not destroy the land. Grazing on the National Forest is carried out by the direction set forth in the allotment management plans and according to the regulations.

of the grazing permit. When conflicts occur, they will be resolved

Topic #G030

We disagree with subsidizing the grazing industry through low grazing fees and the amount of budget spent to support grazing on National Forest System land.

Response #G030

Grazing fees and Forest Service budgets are established on the National level by Congress and are beyond the capability of the Tahoe National Forest to resolve.

Topic #G031

The benefit value for the AUM used in the Tahoe National Plan is too high.

Response #G031

Grazing benefit values for the Tahoe National Forest were developed by the USDA Economic Research Service using 1982 as the base year and not established by the Forest. This approach is per Regional and National direction for Forest planning.

Topic #G032

Maintain the \$1.35 per AUM as the grazing fee.

Response #G032

See Response #G030.

TOPIC #G033

How does the Forest Service plan to monitor grazing use with the shrinking budgets?

Response #G033

Protection of the basic resources of soil and water is the highest priority for budget allocation. These activities that have the potential to seriously degrade soil productivity and water quality will remain the priority for funding uses and defer new projects under serious budget reductions.

Topic #G034

Objects to predator control because of its negative impacts on wildlife.

Response #G034

The predator control program is targeted at the removal of problem coyotes only. A regulated yearly removal of a portion of the coyote population from selected areas within specified sheep allotments will not jeopardize the wildlife resource. The long-term productivity of the coyote population will be restored yearly by young animals filling territory voids created through trapping. The effects of this program have been analyzed in compliance with NEPA and are monitored yearly through coordination of the responsible agencies.

Topic #G035

Supports the predator control program on the National Forest.

Response #G035

No response necessary.

Topic #G036

The Forest needs more study on the predator control program.

Response #G036

See Response #G034.

Topic #G037

Federal predator control programs sacrifice wildlife to below-cost livestock.

Response #G037

Regarding the Federal predator control program and wildlife, see Response #G034. See Response #G030 in regards to below-cost livestock

Topic #G038

The Tahoe National Forest needs to inventory the predator control and trapping practices on the Forest.

Grazing

Response #G038

See Response #G034.

Topic #G039

Continued grazing will make reforestation and grass growth impossible.

Response #G039

Livestock are currently being used successfully as a tool to control competing vegetation on plantations to meet timber Objectives. Vegetative management systems can be designed to meet other resource objectives while maintaining other resource needs. Grazing is done in a manner that minimizes damage to the young trees.

Topic #G040

Grazing in plantations is good.

Response #G040

See Response #G039.

TOPIC #G041

The Forest needs to do an analysis of the conflicts between cattle grazing and plantation management.

Response #G041

See Response #G039.

Topic #G042

How does the Forest Plan consider wildlife needs (mainly deer goals) on transitory ranges if livestock will fully utilize those transitory ranges?

Response #G042

The allocation process used to determine amounts of forage needed to support the deer herd goals on permanent range is the same used on transitory range. See response #G014 for a description of this process.

Topic #G043

The Tahoe National Forest should have no type conversions or the Forest should restrict type conversions and study them.

Response #G043

The Forest does not plan to implement type conversions in the PRF Alternative, however, type conversions are a valid cultural practice that can be utilized to improve range condition and forage production. Before this practice can be implemented, the project must be fully reviewed on the case-by-case basis through the NEPA process.

Topic #G044

Supports type conversions to achieve range management goals.

Response #G044

See Response #G043.

Topic #G045

What is the cost effectiveness and the biological appropriateness of type converting brush to grass?

Response #G045

Before a cultural range practice such as type conversion is implemented, a cost-benefit analysis is completed as part of the environmental analysis process. The environmental analysis process, conducted in compliance with NEPA, will also determine the biological appropriateness of the project.

Topic #G046

Increased livestock use has completely allocated the transitory range for livestock and did not allocate any for deer.

Response #G046

See Response #G014.

Topic #G047

Promote grazing to utilize the forage potential

Response #G047

Forage potential will vary by alternative due to the combination of resource uses and a mix of management prescriptions that achieve a desired management direction, output, goal, or emphasis displayed in that alternative. It is the policy of the Tahoe National Forest to fit the intensity of range management to current and expected social, economic and environmental conditions.

TOPIC #G048

Why is the Forest proposing increased grazing use with a declining demand?

Response #G048

Demand for grazing on National Forest System lands is expected to increase because of the loss of private grazing land to other uses such as crops and urbanization. Permittees will need to use the Forest range resource to sustain their breeding herds. Some demand such as from Sierra Valley may not only be to produce meat, but to sustain family ranches.

Topic #G049

Continue family livestock grazing on the Tahoe National Forest.

Response #G049

It is Forest Service policy to support ranching as an important part of our heritage and to maintain relationships with the livestock industry. Also, see Response #G048.

Topic #G050

Timber and grazing are not the only revenue generating resources.

Response #G050

That is correct. The National Forest System receives revenues from many other resources as well, such as minerals, recreation, etc.

TOPIC #G051

Cattlemen control the Sierra Valleys.

Response #G051

Permitted grazing on National Forest System land is a privilege and not a right. The grazing program on the Tahoe National Forest is conducted in a manner that recognizes other uses.

Topic #G052

Counties receive grazing receipts from National Forest System land.

Response #G052

The counties do receive grazing receipt monies as allocated by law. The National Forest grazing program benefits the counties further by the way the program contributes to community stability in agricultural areas. See Response #G048.

Topic #G053

Proposed increases in grazing outputs will increase grazing trespass problems for adjacent private land owners.

Response #G053

All grazing outputs are regulated and authorized through the National Forest Grazing Permit System. Livestock drifting, regardless of numbers, off their permitted area is considered unauthorized use and will be handled as outlined by the regulations of the grazing permit on a case-by-case basis.

TOPIC #G054

Remove grazing from wilderness and roadless areas

Response #G054

Grazing in wilderness and roadless areas is authorized and encouraged by various Acts of Congress and should continue in a manner compatible with resource values.

Topic #G055

Planning nonstructural range improvements in the wilderness is against the Wilderness Act.

Response #G055

Range improvements are permitted by the Wilderness Act if those improvements fully meet the direction and the intent of the Wilderness Act.

Topic #G056

What does extensive management in the wilderness mean?

Response #G056

Extensive range management means grazing will be managed in a way that minimizes the need for structural range improvements (fences, water developments, etc.) and nonstructural range improvements.

Topic #G057

Remove grazing from Granite Chief and compensate the permittee for improvements.

Response #G057

Grazing in wilderness areas is authorized under the 1964 Wilderness Act. The policy as stated by the 95th Congress reiterated that there would be no removal of grazing simply because an area is designated a wilderness.

Topic #G058

We believe by intensively managing the grazing resources, it will significantly impact the State Historic Park values.

Response #G058

Improved grazing systems implemented under an intensive management strategy (defined in the Glossary of the Plan) and set forth in the allotment management plan will fully identify the State Historic Park needs and values so that they will be fully considered. If unauthorized use does occur, it will be resolved according to the laws and regulations.

TOPIC #G059

Cattle grazing on National Forest System land accounts for such a small portion of the beef supply in the country, why should the Forest continue to permit it?

Response #G059

The significance of the grazing program on the National Forest System land is more important than the direct amount of pounds of beef derived from these lands. Most of the livestock operators on National Forest System lands are in the cow-calf end of the industry. Most permittees sell their calves off of National Forest System lands and other parties will then finish the calves out to market weight for sale. Removal of these calves from the market would significantly affect both the supply, and the cost to produce the amount of pounds in the country. The significance to the small, rural community and the lifestyles of our local residents is an important consideration. The people who make a living by grazing livestock are an important part of our local communities both economically and socially.

Topic #G060

We support reduced grazing outputs as identified in the Citizen's Alternative.

Response #G060

The Forest management team considered a range of forage outputs as displayed in the various alternatives and has determined that the grazing outputs displayed in the Preferred alternative represents the most reasonable balance between range outputs and other resource production, protection and needs.

Topic #G061

We support Alternative I with the grazing outputs as displayed in Alternative A of the DEIS.

Response #G061

See Response #G060.

Topic #G062

We prefer the grazing outputs as outlined in Alternative H as displayed in the DEIS.

Response #G062

See Response #G060.

Topic #G063

We prefer the grazing outputs as outlined in Alternative I as displayed in the DEIS.

Response #G063

See Response #G060.

Topic #G064

We prefer the grazing outputs as outlined in Alternative J as displayed in the DEIS.

Response #G064

See Response #G060.

Topic #G065

Manage the Forest grazing program to maintain 39,000 AUMs.

Response #G065
See Response #G060.

Topic #G066
The Tahoe National Forest should show an alternative with livestock use below 20,000 AUM's for proper analysis

Response #G066
We have displayed a wide range of grazing outputs between the alternatives considered. Alternative NMK displays a range AUM output below 20,000 AUMs per year.

TOPIC #G067
We object to the Forest grazing 60,000 AUM's.

Response #G067
See Response #G060.

Topic #G068
The range in output levels and consequences of resource use appear quite insignificant for all the resources except for timber and range.

Response #G068
The alternatives were formulated within given criteria. These criteria are laws, regulations, directions, public issues, TNF management concerns, and resource use and development opportunities and the physical capabilities of the TNF to produce goods. The physical characteristics and statutory or judicial requirements that limit the range of alternatives were considered for the TNF. Specifically, these present significant limitations on the kinds and amounts of goods and services, the management options, and, thus, the range of viable alternatives that can be considered as part of this planning process. For further clarification of this subject, refer to Chapter 2 Alternatives Including the Proposed Action of the EIS. Significance shouldn't be determined solely by AUMs, but should also consider the needs and effects on local residents

Topic #G069
The RGN Benchmark has an ASQ 9% below MMR in the Text, Table 2.1 = 12%.

Response #G069
It has been corrected in the text.

Topic #G070
The AUM's increase 81% in RNG compared with the MMR in the Text; Table 2.1 = 163%.

Response #G070
It has been corrected in the text

Topic #G071
In the Text, PNW is \$300MM less for RGN than for MMR; Table 2.1 = \$291MM.

Response #G071
It has been corrected in the text.

Topic #G072
The Forest needs to separate the range theme from the timber theme in each alternative.

Response #G072
Forage outputs are determined in part by the alternative theme and not the other way around. The range along with timber, developed recreation, special uses, water, and mining are generally considered market resources as compared to nonmarket resources such as visual, wildlife, and dispersed recreation.

TOPIC #G073 %066
Why does the Forest allow grazing of Onion Creek Meadow when the meadow is not within a grazing allotment?

Response #G073
It is true that the Onion Creek Meadow does not lie within a grazing allotment. However, the meadow is within a well-established stock driveway between allotments. Some use can be expected when the stock are coming and going.

Topic # G074
The DEIS fails to analyze the impacts of grazing on the plant and animal communities.

Response #G074

The DEIS did discuss the long-term impacts on the plant and animal communities by alternative by displaying the estimated range condition and trend by the various levels of intensity under each alternative. These impacts will be fully considered and resolved through direction of the Standard and Guideline's and practices set forth in the Forest Plan, the NEPA process and will be monitored.

Topic #G075

The DEIS fails to disclose the effects of nutrient export through grazing on long-term soil productivity.

Response #G075

We recognize that livestock may remove some nutrients by maintaining them in their bodies, but the livestock does not remove all the plant when grazing and most of these nutrients are returned to the soil through the animals' waste products. This loss is so small that it could not be measured and did not need to be addressed in the DEIS.

Topic #G076

The DEIS fails to address the negative effects of cattle grazing induced compaction on long-term productivity.

Response #G076

We did not address the negative effects of cattle grazing induced compaction on long-term productivity because this situation reflects poor management practices. When areas of compaction have been found in the past, they have been quickly corrected and long-term productivity has been maintained.

Topic #G077

The final plan must disclose all of the negative effects of livestock on species diversity by:

- 1) Listing of those plant/animal species that are known to be negatively impacted or locally extirpated by grazing.
- 2) Provide a complete census of each allotment displaying names and population trends for all native and introduced plants
- 3) Actions that will be taken to assure that species composition shifts do not occur and that no undesir-

able or weedy plant species are introduced or spread by grazing

Response #G077

- 1) The grazing management systems are designed to prevent livestock from negatively impacting plant/animal species or extirpating them. If these conflicts occur, they will be resolved according to the direction set forth in the Forest Plan, FSM, allotment management plan, and of the grazing permit regulations.
 - 2) Past range analysis information is kept in the working files. This information includes, but not restricted to, condition and trend by range type, etc. We felt that this information was too sizeable to be placed in the Forest Plan and DIS
 - 3) See Response #G026. If weedy species are introduced, several Forest Plan practices may be implemented to alleviate this problem.
-

Topic #G078

The Forest Plan fails to address the effects of livestock on soil erosion in riparian areas and turbidity in the streams.

Response #G078

The Plan does address all the effects associated with implementation of each alternative in Chapter IV of the DEIS. Grazing levels and intensities and their effects on soil and water are a part of this evaluation. It is the Forest's direction to prevent soil erosion and turbidity in the streams by livestock. If these conflicts occur, they will be resolved on a case-by-case basis.

Topic #G079

Monitoring and evaluation requirements that fail to meet the intent of 36CFR 219.12(k)(1) of the FP are range allotment analysis and planning and range condition and trend. It is inadequate because it does not have reporting periods that are immediate enough to be effective or variability standards that are sensitive enough to protect the resources and practices that they measure and evaluate.

Response #G079

Regulation 36 CFR 219 12(k)(1) states: "A quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan". Range allotment analysis and planning determines range production and maintain range resource productivity. This objective is to develop an allotment

management plan that establishes the management of the range resource. The range resource is further evaluated annually through D7 allotment administration and permit compliance and livestock production monitoring. We feel that the monitoring direction of the FP meets with the intent set forth in 36CFR 219.12 (k)(1).

The range condition and trend of the range resource is evaluated at a minimum frequency of 2 to 5 years.

The Regional Forester provides instructions to the National Forests for appropriate sampling methods, number of benchmarks, frequency of remeasurement, and for interpreting data indicative of trend. The time interval between measurements may vary, depending upon the need for trend information in the planning and management of the allotment and upon the vegetation, climate, and management practices used. The direction of the FP meets the Regional Forester's instructions and thus, the intent set forth in 36CFR 219.12 (k)(1).

Topic #G080

The planning documents do not meet the intent of 36 CFR 219.26. Action proposed in all alternatives dealing with livestock grazing and range improvement will seriously reduce genetic and specific diversity (species richness) through habitat destruction and direct extirpation.

Response #G080

The permitted grazing use results from field evaluation and monitoring as directed by the FSM and FSH. Therefore, we believe grazing is managed to prevent habitat destruction and extirpation and does meet the intent of 36 CFR 219.26 in all alternatives. Range improvements are planned to facilitate the management of the livestock grazing by providing for proper utilization of the forage.

Topic #G081

The Draft Plan only considers impacts of range management on seral stage diversity and does not meet 36CFR 219.27(g). The plan fails to consider the impacts of the proposed actions on species, plant, community, and genetic diversity.

Response #G081

Range monitoring through range readiness and utilization limit the extent to which a key species or group of key species may be grazed on key areas.

These standards set forth by the Regional Range Environmental Analysis Handbook and the monitoring plan in the Forest Plan will provide for sufficient herbage residue on key forage species to insure good plant vigor, favorable range trend and good watershed conditions. We feel the plan considers the proposed actions on species, plant, community, and genetic diversity and 36CFR 219.27(g).

Topic #G082

To comply with NEPA, the FEIS must discuss and disclose the effects of grazing on all other resources.

Response #G082

Chapter 4 of FEIS displays the consequences by alternative dealing with the range resource. The environmental consequences are dealt with through the NEPA process on a project basis (allotment plans, range improvements, etc). We feel that the impacts of grazing on other resources are adequately disclosed.

Topic #G083

The DEIS should have discussed the potential adverse impacts on the native animal species from implementing timber/range 'dual use' practices.

Response #G083

The DEIS does evaluate the consequences by alternative for wildlife as well as other resources.

Topic #G084

Utilization of wildlife forage by livestock is an irreplaceable resource commitment.

Response #G084

Allowing livestock to utilize the forage makes it unavailable for wildlife. However, this action is not in violation with NEPA because wildlife needs are fully considered through the allotment management planning process prior to the allocation for domestic livestock. For additional information see Response #G012 and Response #G014.

Topic #G085

The range element map indicates that major portions of Sections 17 and 21 (T16N, R15E) are included.

Grazing

ed in sheep grazing allotment 39. Both of these sections are owned by the North Fork Association and have been managed to maintain their wilderness character for almost 8 decades. Sheep grazing is not allowed on these lands.

Response #G085

The allotment boundary is incorrect. If the land owner does not want to permit grazing, the sheep are not authorized to graze on those lands. If unauthorized use does occur, it will be resolved according to the laws and regulations of the grazing permit system.

HISTORICAL/ARCHAEOLOGICAL RESOURCES

Topic #R220

Historic non-motorized trails should be identified, reconstructed, and maintained now and for future generations to help benefit the public, local economy, and efforts by equestrian search and rescue teams

Response #R220

Management of specific trails will be addressed in a special Trails Plan EA. This Trails Plan will consider all trail systems both historic and modern.

Topic #R221

The Forest Plan and EIS need to recognize the historical and cultural significance of the Western States Trail so that activities that could impact the trail are avoided.

Response #R221

Historical and archeological sites, including historically significant trails, are important aspects of our cultural heritage. Those sites that meet established criteria for inclusion on the National Register of Historic Places or, in the case of a trail, the National Historic Trail criteria, are managed so that their significant qualities and values are not diminished. Cultural Resource Standard and Guideline #1 specified in the Forest Plan apply to all TNF lands. It provides for the identification and protection of historical values.

A historical assessment of the Western States Trail concluded that a portion of the trail is historically important and will be managed to protect those values.

Topic #R222

Protect the Emigrant Trail from modern management activities

Response #R222

Remnant traces of the 'Truckee Route' of the Overland Emigrant Trail, which passes through the Tahoe National Forest, have been identified by historians. The location of this important historic trail is noted in all affected Management Area narratives of the Plan. Forest Service policy requires that significant historic trails be managed along with all other significant cultural resources, to maintain their historic values

Currently, the National Park Service is studying this trail for designation as a National Historic Trail. If the trail is designated, special management considerations will be implemented for those segments of the trail that retain historical integrity.

Topic #R223

Archaeological sites (cultural resources) should be protected and preserved for future generations.

Response #R223

Archaeological and historical sites are an important part of our cultural heritage. Federal agencies like the Forest Service are required by a number of laws and regulations to manage significant sites located on Federal lands to maintain their archaeological, historical, or scientific values. Prior to initiating any project, the Forest Service conducts research and field searches to determine if there are cultural resources that could be affected by the planned project. Any resources located that are found to be eligible for inclusion on the National Register of Historic Places are managed to maintain their significant values

Topic #R224

Protect Wabena petroglyphs and other archaeological sites in the Royal Gorge area.

Response #R224

The Wabena petroglyph site is one of many prehistoric sites that have been identified in the North Fork of the American River headwaters region. The style of the petroglyph suggests Native American occupation of the area between 1500 to 5000 years ago, and is a fine example of California Indian rock art. This particular site is on private land, not National Forest land, so the TNF does not oversee management of this resource. Cultural resources on non-federal lands are not addressed in the Forest Plan and EIS

Historical and archeological sites, including historically significant trails, are important aspects of our cultural heritage. Those sites that meet established criteria for inclusion on the National Register of Historic Places or, in the case of a trail, the National Historic Trail criteria, are managed so that their significant qualities and values are not diminished. Cultural Resource Standard and Guideline #1 specified in the Forest Plan apply to all TNF lands. It provides

Historical Resources

for the identification and protection of historical values.

Topic #R225

Manage paleontological resources along with archaeological resources and identify paleontological resources as Special Interest Areas.

Response #R225

The Antiquities Act of 1900 provides protection for vertebrate paleontological resources found on Federal lands. No vertebrate paleontological resources are known to exist in the TNF. Therefore, no special management consideration currently exists for such resources. Should vertebrate paleontological resources be discovered in the future, they would be protected in accordance with the Antiquities Act.

Topic #R226

The USFS needs to recognize that Forests are a part of Native American heritage.

Response #R226

Native Americans have lived in and utilized the many resources of the TNF for thousands of years. Wise management of Forest resources will help ensure that future generations can continue to receive the

benefits the National Forests have to offer. Archaeological and historical sites that represent the tangible evidence of Native American use of the Forest are managed to maintain their significant cultural, historical, and or archaeological values.

Topic #R227

The section of the DEIS page 3.37 and 4.37 violates 40 CFR 1502.15 by failing to state whether TNF management activities, such as road construction and reconstruction, logging, site preparation, release, TSI, reforestation, etc. have resulted in destruction or damage to cultural resources.

Response #R227

While sections 3.37 and 4.37 of the DEIS do not enumerate all the ground disturbing activities that could effect cultural resources the text makes it clear that cultural resource and historic sites are potentially effected by these activities and is one of the indicators of environmental effects. The text also points out that activities such as fogging, road construction, and reforestation are preceded by cultural resource inventories. Significant cultural resources are protected from project impacts by posting with signs and flagging and by notifying project personnel. These measures have been effective at ensuring cultural resource protection.

LANDS/MINERALS/UTILITY CORRIDORS

Topic #L001

A variety of requests were made to either limit mining or to expand mining. The following are examples of comments. Mining should be curtailed due to potential damage to paleontologic values, amenity values, and riparian values. Mining should be limited to extraction of only strategic minerals. I oppose mining next to my house. Castle Peak should be withdrawn from mineral entry. The entire forest should be withdrawn from mineral entry. All road-building material for Forest roads should be obtained outside the Forest boundaries.

Other comments that requesting expansion of mining opportunities are as follows. Mining should have precedence over all other uses. We need sand and gravel aggregates from the Forest. I oppose scenic corridor withdrawal of Highway 49. Do not withdraw lands with mineral potential from entry.

Response #L001

The TNF recognizes and supports the need to keep the National Forests open and available to all types of uses. Restrictions, such as withdrawals, are used only to the extent necessary for environmental protection or to protect other uses and investments. Table 4.21, Chapter 4 of the FEIS lists the acres of withdrawals. The TNF has completed a review of all existing withdrawals and made a recommendation to the Bureau of Land Management for (a) retention or (b) to be dropped from withdrawal status. The TNF has used the withdrawal authority only where necessary to protect significant resources and major investments. See also topic H008.

Topic #L002

The FEIS should explain why 400 mineral leased permits are expected under the Amenities Alternative, where they conflict with the theme, yet only 220 leases/permits are expected under the Preferred Alternative. It should also explain how the number of expected leases is determined.

Response #L002

Under the Amenities Alternative, roadless areas would be proposed for Wilderness designation under the Wilderness Act of 1964. In the interim period between proposed wilderness and Congressionally designated Wilderness, we anticipate there would be a flourish of mining claims and applications for leases/permits. This is because formal designation

of a Wilderness by Congress would automatically withdraw the area from mineral entry but would recognize pre-existing rights. In other words, people would rush to get their foot in the door before it closed. In outyears, the number of leases/permits would certainly be less than in the Preferred Alternative. The numbers are best guesses based on experiences of the Forest Service and Bureau of Land Management.

Topic #L003

A variety of comments were made regarding land adjustments on the Forest since about one third of the acres within the Tahoe National Forest are privately owned. Some representative comments include the following. Acquire private inholdings especially in the Grouse Lakes, North Fork American River, Granite Chief Wilderness, Weber Lake, Mt. Lola, and critical wildlife habitat areas. Obtain lands owned by Sanat Fe Pacific particularly in the alpine areas should be obtained by the Forest Service. Retain Smarts Crossing area within Section 26, T16N, R10E, MDM, lands within MA53 (Donner), and also lands within Section 29 T21, R14E, MDM. Continue with Goodyears Bar exchange. Plan should show areas that the Forest Service plans to acquire. If the Forest Service should plan to exchange out of lands near the State Park, the State should have first priority to acquire those lands.

Response #L003

We are currently negotiating to acquire lands within Grouse Lakes, Castle Peak and the Granite Chief Wilderness. We will take advantage of other opportunities to acquire lands suitable for the National Forest System. We have no proposals to exchange out of Smarts Crossing. We normally retain lands along significant streams. National Forest System lands within MA 53 (Donner) are small isolated parcels which are impossible to effectively manage. They are best suited as exchange base to acquire lands with high public values. Rights-of-way for roads or trails may be reserved as appropriate when an exchange occurs. Section 29, T21N, R14E, MDM is encumbered with land uses and encroachments that severely detract from its National Forest character. It will be used as land exchange base to acquire lands suitable for inclusion into the National Forest System. The Goodyears Bar exchange is progressing. Areas we wish to acquire will be displayed in the Master Forest Land Ownership Plan based on direc-

Lands

tion in each management area. The State would be notified of an exchange near a State Park.

Topic #L004

The DEIS fails to discuss effects of exchange on soils, cultural resources, special areas, and unique habitats.

Response #L004

Project level environmental assessments will address these concerns along with other aspects of the environment

TOPIC #L005

A variety of comments were received on hydro-electric power generation. The following are representative comments. We oppose Whambo Dam.

We oppose the North West Power Company project on East Fork Creek due to the effects on deer and fish. Full environmental effects of hydro-electric development should be disclosed including effects on fisheries, in-stream flow rates, recreation, wetlands and cumulative effects of hydro-electric projects when combined with others. We are for wise use of hydro-electric potential.

Response #L005

The authority for approval of dams and/or hydro projects lies either with the Bureau of Reclamation, the Army Corps of Engineers, or the Federal Energy Regulatory Commission (FERC). The Forest Service is limited to providing input to the approving agencies on mitigation measures that can minimize or off-set the impacts on the other resources. The TNF has identified these projects as high priority and will continue to work closely with the approving agencies in protecting National Forest values. See topics H082, P041, and P051.

Topic #L006

Community support services such as sewage treatment plants, parking areas, etc. belong on private lands not on Federal lands that are in the public trust.

Response #L006

We concur, although we may authorize those uses when privately owned lands are unavailable.

Topic #L007

I oppose further expansion of the electronic Site at Ward Peak.

Response #L007

The current site plan for the Ward Peak Electronic Site shows there is potential for further expansion. We believe expansion there would be more in the public interest than allowing development of an additional unencumbered mountain top.

Topic #L008

We would like to see access to facilities under Special User Permit addressed in the Plan.

Response #L008

The necessary access to facilities under Special Use Permit is considered on a case by case basis and is included in the Special Use Permit.

Topic #L009

The rationale for transfer of jurisdiction from National Forest System to Research (Pacific Southwest Experiment Station) of a few parcels adjacent to Onion Creek Experimental Forest is not discussed.

Response #L009

The matter of transfer of jurisdiction is being contemplated with the Pacific Southwest Experiment Station. The advantage would be a consolidation of management responsibilities.

Topic #L010

The potential for cooperative studies between the Onion Creek Experimental Forest and UC Chickering Preserve is not discussed.

Response #L010

The potential for cooperative studies between Onion Creek and Chickering Preserve is a matter known to and under the authority of the Pacific Southwest Experiment Station and the University of California.

Topic #L011

There were a variety of comments regarding utility corridors on the Forest. Some were supportive of corridors and some were opposed.

Response #L011

The TNF has identified the 1-60 corridor as a utility corridor. This designation does not preclude the need for additional environmental studies before actual project work is initiated. The demand for utility corridors appears to be increasing based on the number of studies underway by the private sector. The *TNF policy* is to consolidate as many *uses* in one corridor as possible.

Topic #L012

Under Adjacent Ownerships, DEIS page 3.18 and 4.17, this section violates 40 CFR 1502.15 and 1502.16 by failing to discuss and disclose the adverse cumulative environmental impacts of management practices (especially intensive timber management) on Tahoe National Forest lands in conjunction with the same practices on adjacent lands in private, state, or public ownership on the resources as follows: Fragmentation and obliteration of old-growth forest habitats. Long-term maintenance

of soil productivity and protection of the soil productivity and protection of the soil and watershed resources, management and protection of the last wild, roadless, and old-growth forest areas, Maintenance and protection of high quality settings for semi-primitive and primitive non-motorized recreation, and Application of chemical pesticides. Especially herbicide applications in conifer plantation release.

Response #L012

Sections 3.16 and 4.17 of the DEIS do not violate 40 CFR 1502.16 by failing to discuss and disclose adverse cumulative environmental impacts of management practices on Tahoe National Forest lands in conjunction with the same practices on adjacent lands in private or State ownership. The discussion of cumulative impacts on National Forest lands and other lands is under the *respective* resource area of concern and not under the Lands and Adjacent Ownership section. For more discussion of cumulative impacts see Topic #P051.

PLANNING PROCESS

Topic #P001

The Plan puts too much emphasis on commodity production instead of stewardship of public resources

Response #P001

The goal of the TNF Plan is to provide a management program that provides a balance of commodity and amenity resources reflecting National and local concerns. Revisions to the Draft Forest Plan have been made based on public concerns expressed during the comment period to the Draft, especially to improve protection of the soil and water resources

Topic #P002

I do not like being assigned an identification number from Forest upon the Forest's receipt of the respondents letter.

Response #P002

Each letter was assigned a number to track the comments of that letter. Names were not used because we often received more than one letter from one person. Although this may have seemed bureaucratic, it was more effective in tracking the thousands of letters we received.

Topic #P003

The planning period should be shorter--not for 50 years.

Response #P003

NFMA requires the Forests to plan for a 50 year period. The Forest Plan will be reviewed every 5 years and revised every 10 to 15 years.

Topic #P004

The plan should cover centuries, not decades.

Response #P004

Some activities, such as timber inventory controls, have been analyzed for 16 decades; this information is in the planning files.

Topic #P005

The preferred alternative should be selected by the people in a democratic process.

Response #P005

Making the decision on the preferred alternative requires extensive knowledge of Forest resources including soil science, hydrology, forestry, recreation management and others as well as knowledge of needs of both the local publics and those throughout the Nation. A public comment period provides people a way of participating in developing a preferred alternative that best meets their needs. The Record of Decision displays the decision-maker's rationale for selecting the Plan as the Preferred Alternative and its responsiveness to the public issues.

Topic #P006

I appreciate the Forest Services' in-depth research and efforts to communicate with the public.

Response #P006

Thank you for taking the time to express this thought as well as suggestions as to how the Plan could be improved.

Topic #P007

The review period of the draft plan should be extended to a year or 2.

Response #P007

NEPA and NFMA require and direct public involvement in the planning process. The Forest is directed by these regulations to provide 90 days for the public to review the draft documents. This period of time was extended to 137 days for the review of the TNF draft documents.

Topic #P008

Citizens should be given more advance notice of meetings.

Response #P008

We tried to give as much notice as was practical. Newsletters were mailed out in December, 1985 announcing the meetings held in late January/early February, 1986. News releases announcing both meetings and hearings were sent out to the media one month in advance and received coverage by newspapers and radio stations.

Topic #P009

irreversible decisions should be carefully made.

Response #P009

Refer to Chapter 4 of the FEIS regarding irreversible consequences of actions. The decision-maker weighs these consequences carefully before making irreversible decisions.

Topic #P010

*Input should come from others and not just residents of the immediate area Hearings **should** also be held outside of the Forest area.*

Response #P010

Letters were received from throughout the United States, although the majority did originate in Northern California, specifically Sierra, Nevada, and Placer Counties. Meetings to explain the Plan were considered for both Reno and Sacramento, but at that time we thought there would not be enough interest to have a meeting. Hindsight shows that there was enough interest, and in the future we will consider having meetings throughout a larger area

Topic #P011

Planning staff should coordinate with Placer Co.

Response #P011

The planning staff has coordinated with public entities including local Counties and State and Federal agencies

Topic #P012

Provide map of all the roadless areas.

Response #P012

Maps have been provided for all the roadless areas. See Appendix G of the EIS.

Topic #P013

The plan should be reviewed in 5 to 10 years and changed as needed.

Response #P013

NFMA require that the plan be evaluated every 5 years and revised every 10-15 years.

Topic #P014

Concerned with the over-emphasis of Consumptive uses versus non-consumptive uses.

Response #P014

The plan provides a mix of consumptive and non-consumptive uses that protects the resources, fulfills legislative requirements and addresses local, regional and National issues. We do not believe consumptive uses have been over-emphasized based on these considerations.

Topic #P015

1 (We) support the monitoring plan per the Citizen's Alternative

Response #P015

*The Citizens' Alternative has been modeled and is displayed in the FEIS as Alternative NMK The proposed Forest monitoring plan **has** been revised and strengthened to include more frequent monitoring, especially for the soils and riparian resources, and is included in Chapter VI of the Forest Plan.*

Topic #P016

1 (We) support monitoring the plan using an exterior process.

Response #P016

We will consider having the public assist us in the monitoring process.

Topic #P017

We are concerned about monitoring of the plan in light of budget reductions.

Response #P017

*See monitoring **and** evaluation Chapter VI of the Plan. Protection of the basic resources of soil and water is the highest priority for budget allocation.*

Topic #P018

We support monitoring the plan.

Response #P018

Monitoring will record changes made in the plan because of corrections in the data base, boundary adjustments, etc. Refer to Chapter VI -- Monitoring and Evaluation

Topic #P019

The plan is difficult to read.

Response #P019

The planning documents contain a tremendous amount of technical information. We tried to make the documents as readable as possible considering the complexity of Forest planning and the nature of the Forest. Revisions have been made to the draft documents to help achieve this goal. See the glossary and list of acronyms contained in the Plan for added help.

Topic #P020

Maps are good.

Response #P020

Thank you Some revisions have been made in an effort to update them.

Topic #P021

I (We) support the human element in planning; not just for wildlife.

Response #P021

An important aspect of Forest planning is to consider the affects of the plan on people in the local areas as well as Nationally. See Chapter 4 of the EIS for more information on social affects.

Topic #P022

The goals of the Forest Plan should be prioritized because of monetary constraints. We recommend Goal #17, conserving soil and water resources, be number one goal.

Response #P022

See Appendix I of the EIS. The TNF goals describe the desired future condition of the Forest resources. The goals and their priorities are addressed in Chapter V of the Forest Plan.

Topic #P023

Support Landed Forest Stewardship and a plan that is visionary in scope.

Response #P023

Alternative NMK in the EIS, which was analyzed in detail, incorporated much of the Citizen's Alternative

and this concept; in addition, all alternatives embody land stewardship as a matter of principle.

Topic #P024

The FEIS should include a table that shows the staffing needs of various alternatives.

Response #P024

Table 4.2 in the EIS displays staffing needs.

Topic #P025

The EIS does not provide a basis for evaluating the proposed plan's benefits, environmental costs and for comparing the plan with the alternatives. The EIS does not provide the public with information on the environmental effects of the proposed Plan.

Response #P025

The EIS, in Chapter 4, discloses the effects of implementing the alternatives considered in detail on the various resources analyzed.

Topic #P026

Forest Plans should be released in aggregates by economic region so they can be reviewed at the same time.

Response #P026

This is an interesting suggestion and will be passed on to the Pacific Southwest Regional Office for consideration in the next round of planning.

Topic #P027

The DFP violates 40 CFR 1502.2(e) by not providing a broad range of reasonable alternatives because there are none that do not have management activities or commodity production of any kind.

Response #P027

Chapter 2 of the EIS, Benchmarks, describes the minimum level of management (MLV) associated with custodial management of the Forest. We feel that the Forest has a broad range of reasonable alternatives.

Topic #P028

We do not understand some of the assignments to MMR, MIR, and TPC categories.

Response #P028

These are based on the NFMA regulations, the Regional Planning Guide, and Regional timber policies. See the EIS, Chapter 2 for further discussion on these topics.

Topic #P029

What is FCT? (DEIS pg. 2.141, figure 22)

Response #P029

This was an error and should be the CEF benchmark.

Topic #P030

The plan should focus on developing opportunities for private business since government employment in the 5-county area is about 60% higher than it is Statewide.

Response #P030

The relative proportion of the Federal workforce to general employment levels should decline because the Federal workforce would remain fairly stable while the private workforce grows. By providing a stable or increasing level of commodity and services into the future, the Plan would allow private businesses to develop accordingly with greater confidence.

TOPIC #P031

Concerning the Human Community Development Program - we do not understand why 'phase-out' direction (DEIS pg 3.40) will result in increased activities (DEIS table 2.17 pg 2.119)

Response #P031

These programs have often fluctuated widely, depending upon the administration and Congressional funding, although they have remained relatively stable recently. The Forest Service has also depended heavily upon volunteer programs, which have been increasing recently.

Topic #P032

The planning effort does not consolidate plans. There are too many plans unaffected by the proposed plan.

Response #P032

See Appendix A of the Forest Plan. Some existing operational plans are still considered compatible

with the direction established in the final Forest Plan; these will remain. Those plans no longer compatible will be superseded, while a few others will require modification to conform with the Plan's newly established direction.

Topic #P033

Table 1119 (DFP pg 111.45) should include pure numbers in addition to or instead of percentages.

Response #P033

These numbers are available for review in the Tahoe's planning files.

Topic #P034

The DEIS violates 40 CFR 1502.14(b) by failing to clearly display the specific actions that would be taken following implementation of the proposed plan. The final plan must show the proposed actions and balance of uses in a table or chart on land allocation to management prescription.

Response #P034

Please see the map packet for the management area map and the Alternative PRF map. The Plan Appendices @ and J) display the fish and wildlife and timber programs to be implemented, and Appendix A shows those plans still applicable.

Topic #P035

Provide maps for each MA that shows the permitted activities.

Response #P035

Permitted activities in each MA are determined by reviewing each MA writeup in Chapter V of the Plan, especially Section III (Resource Management Emphasis), Section IV (Management Area Standards and Guidelines) and the associated element maps, and Section V (Available Management Practices)

Topic #P036

The system of MA's used to define the practices allowed in each area of the forest should be based on ecological features.

Response #P036

Ecological features are used, as well as others such as administrative, ownership, management emphasis, etc.

Topic #P037

The plan fails to meet the intent of 36 CFR 219.1 1(d) and 219 12(k) because the monitoring and evaluation requirements are not specific enough, and the reporting period is not short enough.

Response #P037

See Chapter VI of the Final Plan on Monitoring and Evaluation We feel that this section does meet the intent of the Regulations.

Topic #P038

Show clearly in the Final Plan how the issues will be resolved pursuant to 36 CFR 219 27(a).

Response #P038

See Chapter IV and the Resolution of ICO's section for each MA in Chapter V of the Final Plan and Table 2.26 in the EIS.

Topic #P039

The DEIS violates 36 CFR 219.12(f)(g)(i) by failing to display conditions and uses that will result from the long term application of each alternative. The DEIS does not disclose all of the irreversible and irretrievable commitments of resources associated with the proposed action and alternative.

Response #P039

Direct, indirect, and cumulative effects are analyzed and disclosed in the EIS, Chapter 4, Section 5; irreversible and irretrievable effects are disclosed in Section F.

Topic #P040

The Final Plan must consider cumulative impacts of intermingled ownership.

Response #P040

Cumulative effects are analyzed, where applicable, in each resource section in Chapter 4 of the EIS.

TOPIC #P041

The adverse environmental impacts of hydroelectric development is a major issue.

Response #P041

See the EIS, Chapter 4, Hydroelectric Projects Except where excluded, hydro project and then effects

are analyzed site-specifically in compliance with NEPA.

Topic #P042

The DEIS violates 40 CFR 15022(d) by failing to state how the alternatives considered in and based on the DEIS will or will not achieve the requirements of sections 101 and 102 of NEPA and other environmental laws and policies.

Response #P042

The Alternative Development Process in Chapter 2 discusses how these requirements are met

Topic #P043

There is no alternative that eliminates new construction of hydroelectric projects due to their adverse environmental impacts.

Response #P043

Please see the EIS, Chapter 4, Hydroelectric Projects, and response P041.

Topic #P045

The section on management areas and prescriptions (DEIS pg 2.32) is vague and does not disclose the intent of the various management themes and objectives it describes.

Response #P045

See also the Forest Plan, Chapter V, Prescriptions and Management Areas, for further discussion on this subject.

Topic #P046

Inadequate funding is keeping the Forest from meeting its legal requirements for conservation and protection of National Forest resources.

Response #P046

Basic resource responsibilities, i.e., soil and water, will be funded before any discretionary outputs are planned

Topic #P047

The FEIS must discuss the present situation where commodity production receives full budget priority at the expense of resource protection and amenity values.

Response #P047

Appendix 1 of the EIS discusses the budget process

Topic #P048

The Best Management Practice (BMP) documents tiered to the Draft Forest Plan are not in compliance with NEPA because they were prepared without implementation of NEPA procedures and have not been subjected to the required environmental reviews

Response #P048

Working cooperatively with the California State Water Quality Control Board, the Forest Service developed and documented non-point pollution control measures applicable to National Forest System lands. Following evaluations of the control measures by State Water Quality Control personnel as they were applied on site during management activities, an assessment of monitoring data and the completion of public workshops and hearings, the Forest Service's measures were certified by the State and approved by EPA as the most effective means the Forest Service could implement to control non-point source pollution. These measures were termed 'Best Management Practices' (BMP'S).

Topic #P049

The DEIS violates 40 CFR 1502.24 by failing to identify methodologies used, and scientific and other sources relied upon for many of the important conclusions in the document.

Response #P049

The methodologies are identified in the EIS for each resource analyzed; some of the appendices also contain supporting material.

Topic #P051

The DEIS failed to consider the cumulative impacts of management activities on the Tahoe National Forest when combined with the impacts of activities on other private, state, or public land within or adjacent to the forest boundary.

Response #P051

The Council on Environmental Quality (CEQ) regulations require that all Federal agencies consider cumulative impacts in environmental analyses in compliance with NEPA. CEQ regulation 40 CFR 1508.7 defines cumulative impact as 'the impact on the environment which results from the incremental impact of the action when added to other past, present, and

reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions"

The Forest Planning process being conducted under direction of the NFMA regulations is in itself a cumulative effects assessment at a programmatic level. However, the cumulative effects assessment completed in the Draft Land and Resource Management Plan (DLRMP) only considered effects resulting from activities on National Forest System lands. We agree with the need to evaluate total impacts, which includes effects from the private land sector (i.e., checkerboard lands) in the cumulative analysis. However, the cumulative analysis should be limited to those resource areas where joint Forest Service and private land operations have a significant effect on the environment. The cumulative effects analysis resulting from Forest Planning may provide information that will be useful in preparing cumulative effects assessments for specific sites or activities. For certain types of Forest activities, a Forest-level analysis may suffice. For other types, only a project-level analysis may be needed. For some activities, analysis may be needed at both Forest and project level.

As mentioned above, the Forest Planning analysis is a type of cumulative effect analysis. Many effects are routinely analyzed through this procedure, and no further analysis is necessary. However, other effects are significant and require a more intense examination and disclosure. NEPA guidelines for scoping may be used to identify these effects. Guidelines for this process are described in 40 CFR 1501.7 and 1508.27. This step may be described as the "significance screen: Two components of NEPA significance are context—who is affected?—and intensity—how severe is the impact? The following criteria (as used to determine what additional cumulative analysis is needed beyond that already addressed through the Forest Planning process.

- environmental risk associated with the activity
- values concerned (both National Forest and private land)
- potential for affecting off-site values
- legal obligations
- longevity of the activities
- irreversible or irretrievable commitment of resources.
- key issues
- forest wide activity or is activity limited to specific locations
- outservice proposal such as mining and special uses. Information may not be avail-

able for analysis in a programmatic analysis

Based on the above, the Final LRMP evaluates Cumulative effects on water, soils, wildlife and fish, threatened and endangered wildlife and plants, visual management, recreation, unroaded areas, and transportation (trails). We will be evaluating herbicides for all alternatives carried forward in the FEIS, and we will also evaluate herbicides at the project level when we are ready to propose a herbicide project. It should be pointed out that the state of cumulative analysis is in its infancy. Analytical tools are now being developed for programmatic analysis. The TNF will be incorporating project level cumulative analysis on project or compartment analysis that will reflect state-of-the-art methods

When cumulative thresholds may be exceeded, they historically have been absorbed by the public, or in this case, the National Forests. Forest Service programs have been adjusted when project analysis indicate a threshold may be exceeded. Current Forest Service policy has assumed all land owners or agencies cooperate and accept their 'fair share' in meeting the thresholds. In fact, the policy generally operates on a first-come first-share concept. Coordinated planning and implementation between all land owners and/or agencies is needed to adequately address the problems associated with cumulative impacts.

DETERMINATION OF NEED FOR ADDITIONAL CUMULATIVE ANALYSIS

The following is the rationale for determining the need for cumulative analysis beyond what's already discussed in the Forest Planning process:

A Management activities where existing assessments appear to satisfy cumulative effect analysis.

1) Economic Efficiency Analysis. The economic assessments already required provide a measure of National economic efficiency and, thereby, a measure of the economic cumulative effect

2) Social Impact Analysis. The estimation of social effects considers the mix of resource objective, scheduling, input/output analysis, effects on local and Regional. The cumulative effects on air quality is currently evaluated by the Regional Air Quality Boards

3) Hydropower Development. The Federal Energy Regulatory Commission (FERC) has recently considered the cumulative effects of hydropower on the Yuba River basin as a part of their licensing process. Though this does not relieve the Forest Service of its authority under the Federal Power Act or Federal Land Policy Management Act, any information developed by FERC may be incorporated by reference in Forest Service analysis.

4) Chemical Use. A separate environmental analysis in compliance with NEPA is done at the Regional level for the programmatic level. Project-level aspects of chemical use will be assessed also at a project level when a herbicide project is proposed.

5) Cultural Resource Evaluation. The existing cultural resource review process incorporates consideration of the cumulative effect of proposed actions.

6) Resource activities where site-specific or project-level analyses are needed to address cumulative effects.

1) Fire Hazard Risk and Use. Existing techniques done on a site-specific basis consider the cumulative effects of an action of fire hazard, and the cumulative effects of fire use, such as prescribed burning, on other values

2) Special Uses. The specific characteristics of future special uses which may have associated cumulative effects cannot be anticipated. The environmental analysis in compliance with NEPA done for each special use must address the potential for cumulative effects.

3) Mining and Mineral Leasing Activities. Some cumulative effects of these activities may have to be addressed. For the most part, the site-specific action will have to be proposed before the cumulative effects can be considered.

Topic #P052

The DEIS failed to provide a wide range of alternatives for evaluation and thus violated 40 CFR 1502.14(a), by not including alternatives which considered

- 1) uneven-age management
- 2) uses only existing roads with no new road construction to meet alternative goals.
- 3) even-age management using only shelter-wood and seed tree silvicultural systems. **No clearcutting!**
- 4) protects all Rarell roadless areas from timber harvest, road **construction**, grazing, mining, and recreation developments.
- 5) emphasizes high visual quality.
- 6) protects all riparian areas, streamside zones, lakes, wet meadows, floodplains, moraines, and springs.
- 7) emphasizes full natural biological diversity.
- 8) emphasizes soil and water values.
- 9) protects steep slopes and sensltive soils from logging
- 10) assumes unavailability of herbicides
- 11) does not include mechanical site prepa^mechintechiques such as tractor piling and burning, or broadcast burning. Uses concept of chipping material and returning chips to the site.
- 12) prohibits new construction of hydroelectric projects.
- 13) includesthe nomination of eligible rivers to the Wild and Scenic River System.
- 14) emphasizes the use of manpower programs to accomplish thinning in lieu of mechanical systems.

Response #P052

The Draft Environmental Statement presented a wide array of alternatives that addressed the major issues that were identified during the public scoping process back in 1979, in 1980, and 1983. The public comment received in 1986 from review of the Draft EIS/Plan provided further input regarding significant issues to be addressed in the Forest Plan.

The Draft EIS presented 11 alternatives that were evaluated in detail. The Tahoe also evaluated 7 other alternatives through the use of the FORPLAN computer model. These were either dropped from further consideration or combined with the 11 alternatives that were carried through full evaluation. These alternatives were designed to look at different ways to address the key issues.

Regulations for implementing the National Environmental Policy Act developed by the Council on Environmental Quality discuss the requirements for alternative formulation under Section 1502.14,

'Alternatives including the proposed action: This Section requires the agency to: (a) 'Rigorously explore and objectively evaluate all reasonable alternatives and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated. (b) 'Devote substantial treatment to each alternative considered in detail so that reviewers may evaluate their comparative merits ' In considering this direction, there is no absolute right or wrong answer, nor is there any 'magic' answer to how specific or how detailed an alternative should be. The practical solution would appear to be an approach that would address the major public issues, management concerns, or opportunities identified on the Forest and to provide a reasonable range of choices. This in fact was done in the Draft EIS/Plan. Public comments have suggested greater detail be included. We agree the issue of uneven-age management is an issue that should be addressed as a major alternative theme and we have done so in the Final EIS. The other issues raised including even-age management with no clearcutting, additional protection of riparian and streamside areas along with protection of diversity and soils, short and long rotation management, minimum new road construction, protection of existing unroaded areas, limited site preparation, visual quality, wild and scenic rivers evaluation and labor intensive methods for site preparation are important concerns and are included within the major alternative themes, especially Alternative NMK. The issue of the use of herbicides has been evaluated in a separate Vegetative Environmental Statement, and use of herbicides will be in accordance with direction in this separate document. Therefore, its beyond the scope of Consideration for this EIS. Hydroelectric development also requires a separate planning process and decisions relative to the 'go or no go' for a hydroelectric project will be determined at a project level. The direction found in the Forest Plan does provide direction and project mitigation requirements.

Topic #P053

The Plan fails to consider and establish a monitoring program to assess the cumulative impacts on the natural resources of the region of management practices that occur on public and private lands within and adjacent to the Forest boundary. Resources that must be monitored include: the riparian ecosystem, water quality, wildlife habitat, old-growth habitat, visual quality, soil productivity, recreation resource trends and species diversity.

Planning Process

Response #P053

The monitoring program displayed in chapter VI of the Forest Plan is designed to determine several things including whether environmental quality standards are being achieved on National Forest land. If there are cumulative impacts from private land or other National Forest lands on a certain resource these impacts will be recorded. The monitoring program emphasis is on to what degree environmental standards are being achieved. If they are not being achieved the Forest will determine the cause of not meeting standards or objectives and adjust programs and activities to meet standards. If cumulative impacts from private land are a part of the problem the Forest will evaluate this factor as well as other contributing factors to determine the proper course of action. Cumulative impacts are considered in the environmental analysis process and documented in the Forest Land Management Plan EIS. For more detail as to how cumulative impacts or effects are dealt with in the Forest Plan EIS please see topic #P051.

TOPIC #P054

The FEIS must fully discuss and disclose the impacts of the proposed action on the quality of the human environment.

Response #P054

Refer to Chapter 4 of the EIS for the disclosure of the effects of each alternative on identified resources as well as on the social and economic environments. These, together, constitute the human environment.

Topic #P055

The Tahoe needs to address the effects of the Forest Plan on the citizens of the State of California.

Response #P055

The economic and social consequences discussions in Chapter 4 of the EIS discloses effects on regional recreationists, as well as local groups, that are within the sphere of influence of the Tahoe NF. The Regional timber supply/demand situation in California is addressed in Appendix N of the EIS.

RECREATION, GENERAL

Topic #R150

People are concerned about the negative effects of management activities upon vegetation and its effect on reservoir, lake, or river recreation opportunities

Response #R150

We agree that land-disturbing activities should be minimized in riparian areas, and near lakes, reservoirs, and streams. Management of stream-side zones will exclude timber harvest unless it is prescribed to accommodate the needs of riparian-dependant resources (fish, wildlife, soils, and water,) or is needed for public safety.

In areas near lakes and reservoirs, visual quality standards will ensure that a scenic background is maintained. Development of recreation improvements at these water-oriented sites will consider the other resource values.

Topic #R151

Private lands and residences can be adversely affected by recreation use from National Forest lands.

Response #R151

One of the responsibilities of the Forest Service is to provide recreation opportunities for the public. In order to meet this responsibility, it is sometimes necessary to develop recreation facilities on lands near private property.

Use of these recreation facilities, as well as recreation activities on National Forest lands, may have some effect on the nearby private property. In developing specific projects, the impact that implementation of the projects might have on private property is considered. Environmental analyses conducted in compliance with NEPA will document the consideration of alternatives as well as the effects of implementation of the alternatives. Project selections and implementation will minimize the effects on private property

In situations where existing facilities are in some way contributing to public use moving onto private land, we will take necessary actions to discourage public use moving onto private land.

Topic #R152

Alternative A diminishes the recreation opportunities which reduces tourism. It ignores the long-term effect on county employment in lieu of short-term profits. Tourism supports more jobs than timber, and by stifling recreation growth you stifle economic potential. Marginal value of SPNM should be relatively high.

Response #R152

It is Forest Service policy to manage TNF resources within multiple use objectives. Alternative A would meet projected demand for developed and overall dispersed recreation use over the entire planning period. The Forest considered the above mentioned relationships (documented in Chapter III, Socio-Economic section, of the Forest Plan) and concluded that the management approach represented by the Preferred Alternative is that which maximizes Net Public Benefits. These consequences are analyzed in Chapter 4 of the DEIS/FEIS

The marginal value of semi-primitive nonmotorized areas can be considered relatively high. Marginal value, however, is not the only determinant on which areas are allocated to semi-primitive nonmotorized designation or other ROS classes.

Topic #R153

The Plan does not put enough emphasis on recreation, and too much on timber. It fails to adequately consider the recreation demands of the populations within the spheres of influence or from international tourism.

Response #R153

The projected demand for developed recreation will be met during the entire planning period under the Forest Plan. Projected demand will also be met for activities which benefit from improved road access and are not affected by the appearance of land modification.

Opportunities for non-motorized recreation requiring primitive roads and near-natural-appearing landscapes may be reduced in some areas. Additional areas in the North Fork of the Middle Fork American River, North Fork American River, Sunnyside, Castle Peak, South Yuba and Middle Yuba areas will be managed for semi-primitive motorized and nonmo-

torized recreation as identified in the Public Involvement process.

Due to limited resources, the Forest is not capable of meeting demands for all outputs and opportunities. Choices have been made to allocate these limited resources. The Forest realizes that the demand will exceed supply for semi-primitive nonmotorized and motorized recreation, as will the demand for other commodity and non-commodity outputs.

Topic #R154

Plan fails to recognize that visual quality is key to the recreation experience. Degradation of visual quality impacts tourism. Logging should be selective, especially along trails and back roads.

Response #R154

The Forest Plan and EIS does recognize visual quality as a key ingredient to the recreation experience. Protection of existing visual quality is automatically protected in all developed sites, and recognized potential recreation sites. Visual quality is also emphasized along major recreation roads, heavily-used State Highways, Interstate 80, views from major lakes and reservoirs, wilderness, semi-primitive nonmotorized and motorized areas, views from the North Fork American River Wild River, and views from selected trails.

It is possible that degradation of the Forest visual quality could impact tourism. The TNF has been careful in the Forest Plan to protect the visual quality in areas of high recreation traffic and visitor use to provide for high-quality recreation experiences. These provisions should meet the needs for tourism and attracting tourists.

Selective logging is one of the silvicultural practices that can be used along trails and back roads but clearcutting will also be used as long as it can meet the other resource objectives for the area including visual quality objectives.

Topic #R155

Tourism is the Tahoe's biggest industry.

Response #R155

Tourism is recognized as a major industry within and adjacent to the Tahoe National Forest. See the discussion in Chapter 3 of the EIS under the Economic

and Social Environment for some of the relationships of tourism to other economic sectors.

Topic #R157

You should anticipate more backcountry recreation and plan for it.

Response #R157

The DEIS in Chapter 4 under recreation indicates that demand for backcountry recreation will exceed capacity when the present use and population trends are projected out to the fifth decade. In response to these concerns there has been more provision of SPNM and SPM areas in the Final Plan.

TOPIC #R158

Both Recreation and Timber can be maximized.

Response #R158

Recreation and timber management can co-exist. Timber management can contribute to recreation activities which benefit from improved road access, such as hunting, fishing, auto camping, and driving for pleasure. Timber management can be detrimental to activities which require a natural-appearing landscape.

Topic #R159

The Plan violates 36 CFR 219.12(g) (3)(iii) by failing to address the economic effects, direct benefits, nonmonetary benefits and effects on the employment of each alternative to local governments. The DEIS fails to assess the impacts of the loss of non-timber related employment due to the decline in property values and tourism resulting from the degradation of visual and other recreation values because of intensive even-aged management (clearcutting) and large increases in timber cutting over historic levels.

Response #R159

The DEIS does not address the impacts of the loss of non-timber related employment due to the decline in property values and tourism as there is not a documented proven relationship between logging activities and the loss of jobs, decline in property values, and loss of tourism in the Tahoe region. The DEIS does however address the levels of timber and non-timber related employment and also evaluates the visual impacts from timber activities in various alternatives in the DEIS/FEIS.

Topic #R160

The DEIS fails to discuss the importance of the recreation and tourist industries and scenic qualities of the TNF in the maintenance of economic and community stability in the largely residential impacted counties. The FEIS must clearly disclose the full impacts of the proposed large-scale industrial management on these vital local economic resources.

Response #R160

The DEIS and FEIS discuss the importance of the recreation and tourist industries in Chapter 3 under the Economic Environment. The importance of scenic quality is discussed in Chapter 3 under Visual Resources. The discussion refers to public concern and demand for scenic quality and, tourists are a significant component of this public.

Topic #R161

What are the effects from budget reductions on the amenity resources including: hiking and equestrian trail systems, primitive and developed campgrounds and visual quality. At present, these resources are not even receiving adequate maintenance. The facts must be clearly disclosed.

Response #R161

Budget reductions can affect all the amenity resources listed above. With limited budgets the TNF keeps as many recreation opportunities available to the public commensurate with public demand, the cost of management, and the ability to meet basic public health and safety standards. The Forest Plan displays the direction and priorities for recreation management and, to the extent possible, meets these directions and priorities proportional to the money available.

Topic: #R162

Inadequate funding is presently resulting in failure to comply with public demand for protection of important natural resources such as riparian areas and water quality, visual quality, wildlife habitat, soil productivity, natural forest diversity, dispersed recreation and non-motorized recreation.

Response #R162

Inadequate funding does not preclude the TNF from protecting visual quality, dispersed recreation and non-motorized recreation resources. Low funding does limit the Forest's ability to develop new pro-

grams, and provide the high quality programs desired but basic protection requirements or standards receive first priority of the TNF.

Topic #R163

Some people believe there is too much emphasis on commodities over amenities while other people believe there is too much emphasis on amenities over commodities.

Response #R163

The TNF has attempted to achieve a balance of amenities and commodities in terms of land allocation and resource outputs. In the DEIS an array of alternatives with different levels of emphasis for commodities and amenities were evaluated. Eased on this analysis a preferred alternative was described having the best balance of goods and services with an emphasis on both amenities and commodities. The FEIS and Final Plan have adjusted this balance based on information received during the public response period.

Topic #R164

Managing the TNF for visual resources is not the best use of the land. It results in a decrease in commodity outputs and associated jobs.

Response #R164

Wood fiber production and visual resources are both important aspects of multiple use management of the TNF. Generally, timber production is emphasized on productive ground. Visual quality is emphasized in areas of high public use such as along main roads, recreation use areas, popular water bodies, and well used trails.

Visual quality and quality of the recreational experience are often closely related. We recognize that this emphasis in certain areas does reduce the annual timber harvest quantity and associated jobs, but enhances the recreational resource and associated jobs. The Forest Service strives to produce multiple benefits on National Forest land.

Topic #R165

The concern was expressed that summer dispersed recreation opportunities should be de-emphasized on productive ranges and that allotment permittees should be consulted in the placement of developed sites.

Response #R165

Dispersed recreation use and range use are both valid uses of National Forest lands. In general both uses are considered to be compatible with each other. Emphasis of one resource over another is decided on by a case by case basis. If developed sites are planned within an allotment, the permittee would be contacted as part of the public involvement phase of that project.

Topic #R166

Alpine Stables should be allowed to remain on its existing site

Response #R166

We see public recreation value in the continued operation of Alpine Stables and have instructed the permittee that a master plan must be approved before significant capital improvements can be authorized. The master planning process should consider both alternative designs and alternative locations. A site specific environmental analysis conducted in compliance with NEPA will be used to select a design and a site.

Topic #R167

The Forest should place high priority upon the development of new recreation facilities including campgrounds, picnic areas, and interpretive facilities.

Response #R167

There have been few opportunities in the last decade to develop new recreation facilities on the Forest due to low budgets. This has caused an increased need to provide facilities to accommodate existing demand. Demand projections indicate that high occupancy rates can be expected for most facilities that could be developed near major travelways and water bodies. The Forest will place emphasis on planning and development of new facilities on Management Areas 13 (Forty-Niner), 32 (Stampede/Boca), and 69 (Truckee River).

Topic #R168

The amenity value & potential recreation development sites needs to be protected.

Response #R168

We have identified potential recreation development sites that we expect will be needed to meet a project-

ed demand for the next 50 years. The amenity value of these sites will be protected.

Topic #R169

Higher priority should be given to developing recreation sites than leaving areas in a roadless status or in a natural condition

Response #R169

No identified potential recreation development sites are located in inventoried roadless areas. Since there is a demand for both dispersed recreation and developed recreation sites both are given equal emphasis depending on management opportunities and need.

TOPIC #R170

New recreation sites should not be constructed within MA 69, (Truckee River), because campers cause impacts to adjacent private properties or property uses.

Response #R170

See Response #R182 for topics related to the proposed Bear Creek Campground/Picnic area developments.

A Recreation Composite Plan for the Truckee River Corridor was approved in 1980. That plan reinforces direction adopted in earlier plans to develop additional camping and day-use sites along the River and to acquire certain undeveloped private parcels as they become available. The Composite Plan received Placer County's full support. A specific goal of that plan is to provide assured public access and to minimize conflicts between visitors and property owners.

Future construction decisions will be based on disclosures made through the environmental analysis conducted in compliance with NEPA.

Topic #R171

Developed recreation sites should not be constructed in MA 04 (Sunnyside).

Response #R171

We have no plans to develop campgrounds or day-use facilities in this management area. Minor facilities such as 'primitive toilets' may, however, be needed to serve certain concentrated use areas.

Topic #R172

The Forest should maintain the existing levels (Capacities) of developed recreation opportunities

Response #R172

We plan to maintain existing capacities of developed recreation opportunities and over time improve existing facilities where appropriate. Also in the future the Forest Plan and FEIS indicate that developed recreation capacity will be increased to meet demand. See the Developed Recreation discussion in Chapter 2 of the FEIS for the preferred alternative.

Topic #R173

The Forest should not develop recreation facilities in MA 18, (Henness).

Response #R173

There are several identified potential recreation development sites located within MA 18 that will be needed to accommodate a projected 50 year demand. Future construction decisions will be based on disclosures made through the environmental analysis conducted in compliance with NEPA.

Topic #R174

The Forest should construct new recreation facilities in MA 18, (Henness) along the 'Fiberboard Road'.

Response #R174

We will consider developing new recreation facilities along the Fiberboard Road where potential recreation development sites have been located and when demand indicates a need for such facilities. Future construction decisions will be based on disclosures made through environmental analyses conducted in compliance with NEPA.

Topic #R175

The Forest should not develop recreation facilities in Section 24 near French Meadows.

Response #R175

There are no potential developed recreation sites identified for Section 24 and there is no Management Area direction in the Forest Plan to develop recreation sites on Section 24.

Topic #R176

The Forest should upgrade the existing recreation facilities on the Truckee River (MA 69).

Response #R176

We agree and have listed Granite Flat and Goose Meadows as top priorities on the Forest for rehabilitation funding.

Topic #R177

The Forest should upgrade the existing recreation facilities at Boca Reservoir (MA 32)

Response #R177

We agree. We have placed an emphasis on planning and recreation development in a few areas on the Forest and this is one of the areas.

Topic #R178

The Forest should increase fees in developed recreation areas

Response #R178

The Forest Service fee pricing structure seeks a balance between:

- a) The need to assure that facilities are available to the widest spectrum of income classes
 - b) To avoid competition with developments within the private sector.
 - c) and, Be in the same price range as similar facilities offered in the same general area by other agencies or institutions.
-

Topic #R179

The Forest should not charge for use of developed recreation facilities:

Response #R179

It is Forest Service policy to pass on the cost of providing services to those who use the services subject to provisions of the Land and Water Conservation Act.

Topic #R180

Even-aged management practices should not be allowed on inventoried potential recreation development sites.

Response #R180

Certain even aged management practices are highly compatible with the need to enhance the long-term timber stand suitability for recreation development. Special cutting practices will be employed on sites that will be needed to accommodate both immediate and short-term projected demand.

Topic #R181

The Forest should place high emphasis upon budgeting for the restoration of existing recreation developed sites.

Response #R181

We will more aggressively seek funding to finance both facility restoration and new construction. Congress appropriates the funds for rehabilitating existing recreation sites and the Tahoe will have to compete with other Forests for these funds. The merits of establishing new financial partnerships with the private sector and utility companies, both public and private, will also be fully explored.

Topic #RI 82

Alternative I should be changed to reflect a plan to develop new recreation sites.

Response #R182

In the DEIS in Chapter 4 under recreation there is a table that shows the assumed Developed Recreation Capacity and Recreation Visitor Day use by alternative. Alternative I shows no growth in capacity because under the alternative theme it states that no capacity should be expanded on capable Forest land.

Topic #R183

Camper and motorhomes should not be allowed for overnight use in the winter in deep snow areas.

Response #R183

We have noted an increase in expressed demand for winter RV camping opportunities. To the extent that it is economically practical to do so, we will attempt to make developed campgrounds available year round. This opportunity will be taken into consideration when facilities are programmed for rehabilitation or for new construction.

Topic #R184

PG&E campground at Lake Van Norden was removed several years ago

Response #R184

We are aware of this change and will remove the reference to it in the Management Area direction in MA 070 in the Forest Plan.

Topic #R185

The county recommends that continued or increased use of concessionaires should require a revised cost formula between Sierra County and the USFS.

Response #RI 85

The existing cost formula between Sierra County or any other County and the USFS is based on specific acts of Congress. We, on this forest, can not negotiate a new cost formula with any County. Increased use of concessionaires can effect the amount of recreation money that is returned to the County. We will take that consideration into account when and if it considers expanding the concessionaire program.

Topic #R186

Outfitted trips should be permitted on the Middle Yuba and South Yuba river.

Response #R186

The TNF does not presently preclude outfitter/guide trips on the Middle or South Yuba Rivers. The TNF is not aware of any requests for special use permits to provide such a service at this time.

Topic #R187

The Forest should limit the number of rafts on the Truckee River.

Response #R187

The raft concessions on the Truckee River between Tahoe City and River Ranch are regulated by Placer County. The National Forest System lands adjacent to this river segment are administered by the Lake Tahoe Basin Management Unit. There are no raft concessions or outfitter guides allowed (by Placer or Nevada County Ordinances) on the Truckee River through the Tahoe National Forest. The TNF supports those ordinances as currently written.

Topic #R188

Financial plans for the USFS and its concessionaires should be more fully disclosed so that the federal projects are carrying the equitable share of public services cost requirements.

Response #R188

Financial plans for the USFS and its concessionaires are fully disclosed to appropriate authorities including county governments. If any information is perceived to be missing the county government should request the additional information desired.

Topic #R189

It is important to know existing campground use in riparian zones and the resulting impacts in these zones.

Response #R189

Yes, it is important to know existing campground use and impacts in the riparian zone and there still are some old campgrounds in the riparian zones. As resources allow the Forest is moving these sites out of the riparian zone or converting them to day use activities. With new campgrounds the TNF follows the SMZ guides that keeps major developed campgrounds out of the riparian zones.

Topic #R190

The proposed Bear Creek Campground/ Picnic facilities should not be built in Management Area 69 (Truckee River) for the following reasons:

- air quality impacts from campfires and additional traffic
- increased wildland fire potential from escaped campfires
- water quality impacts from human waste or soil compaction
- traffic impacts on Alpine Meadows Road, Highway 89, or at their intersection.
- noise impacts from traffic or campers
- visual quality impacts as seen from Alpine Meadows Road, homesites, or from within the project area
- crime from campers trespassing onto private lands
- increased need for and cost of social services (e.g. law enforcement, health services, fire suppression) to be borne by homeowners, as county residents
- increased utility needs - water, sewer, and electricity
- impacts to on-site wildlife, fishery, wetland, plant life, and current recreation uses (hiking, fishing, off-track Nordic skiing etc.).

Response #R190

Demand projections clearly indicate the need for additional developed camping and picnicking facilities

on or near the Truckee River. The Bear Creek site has all the recreation characteristics necessary for a high quality Forest Service campground.

The development of these facilities will follow a project level environmental analysis conducted in compliance with NEPA. That analysis will consider the above listed issues as well as other agency concerns. Future decisions, including the decision to build this facility complex and to adopt specific mitigations measures, will be based on disclosures made through the environmental analysis process at a future time.

Topic #R191

Please close your Forest to target shooting

Response #R191

Target shooting is a legitimate recreation use on the TNF and the Plan does not close the Forest to target shooting. We do recognize the potential dangers of target shooting and encourage safe practices including the careful location of targets that will ensure the safety of all Forest users.

Topic #R192

Page 3.52 reports a developed site capacity of 30,104 PAOTs yet table 2.26 (DEIS page 2.157) "builds" to fifth-decade figures substantially less than that in all alternatives. We could not find proposals to reduce developed site capacity in other DEIS decisions.

Response #R192

You are correct that we did not propose to reduce developed site capacity in the alternatives. The two different tables compare different levels of People at One Time (PAOT). The Table on page 3.52 of the DEIS includes private land downhill skiing capacity as well as private organization camps and summer homes on Forest Service System lands whereas, the Table on page 2.157 lists the PAOT capacity of just TNF developed sites. A footnote will be added in the FEIS to indicate what the PAOT covers.

Topic #R193

Table 3.19 (DEIS page 3.55) raises the question of use as a percentage of capacity. It would be helpful to include that analysis.

Response #R193

Percentage of capacity could be considered useful but it can also be misleading unless there is a dis-

discussion of seasonal capacities and practical capacities versus theoretical capacities. To understand the relative capacities of ROS classes over time it is easier to refer to Table 4.25 in the DEIS and compare acres of ROS class provided by alternative and the projected recreation use each ROS class will provide.

Topic #R194

Table 3.20 (DEIS page 356) shows 827,499 acres categorized under 1982 RIM procedures Table 2.18 (DEIS page 2 121) presents very different figures within the ROS classes for 1982 and a total of only 794,374.

Response #R194

Table 2.18 (DEIS page 2.121) shows a total of 'only 794,374 acres because that is the official land base for the Forest The 827,499 acres shown in Table 3.20 is based on RIM figures where the Forest acres have not been adjusted due to land exchanges over several years period.

Topic #R195

Table 4.23 (DEIS page 4.54) presents identical numbers for developed skiing for all alternatives yet project lower numbers for Alternatives G, H, and I. in the subsequent decades than other alternatives.

Response #R195

Alternatives G, H, and I are shown to the maximum Practical capacity of skiers at one time at 9,250 SAOT. The existing situation today is 5,800 SAOT. The assumption for these alternatives (G, H, and I) is that the existing 545 acres will be developed to their maximum practical capability and use will stay static in the following decades because no more capacity will be provided in these alternatives.

Topic #R196

The graphic display in DEIS, page 4.92, has some unfortunate implications.

Response #R196

No implications are intended for the graphic display on page 4 92 of the DEIS The graphics is intended to display the different levels of visual management so that the average person can get an impression of what the Visual Quality Objectives would look like.

Topic #R197

The statement about visual quality for Alternative I in DEIS, page 102, is not consistent.

Response #R197

The statement about visual quality for Alternative I in the DEIS, page 4 102 is consistent with comparison with other alternatives. The same parameters for evaluating effects were used for each alternative

Topic #R198

The Tahoe National Forest is in a prime recreation area and the potential for recreation growth of all kinds is immense. We believe the Forest should look ahead and consider long-term recreation, conservation, and protection as the primary Forest Sewice goals.

Response #R198

Yes, the TNF should and does consider long-term recreation, conservation and protection as primary goals for the Forest along with long-term goals for other resource areas.

Topic #R199

The Tahoe National Forest should explore possible alternatives for recreational user fees.

Response #R199

We do not have the discretion to set policy for charging recreation user fees. This is set by Congressional direction Within set policy, the TNF can and does explore various approaches to user fees.

Topic #R200

36 CFR 219.21 (a) (2) is violated by failing to identify and disclose the recreational preferences of the user groups and the settings needed to provide quality recreation opportunities.

Response #R200

The above cited CFR is not violated because the Recreation discussion in Chapter 3 of the DEIS does identify and disclose the recreational preferences and the settings needed to provide quality recreation opportunities The approach used to identify user groups is to identify the major kinds of recreation activities they partake in. The Forest identifies these activities as developed and dispersed recreation and what kind of setting they desire is identified by ROS class Use is also considered in terms of winter

use (developed downhill skiing and cross country skiing- commercial and backcountry, and snowmobile use) and summer use (camping, hiking, OHV use,). See the Developed Recreation Summary Table for most of the activities expressed by type of facility. User preference is expressed in terms of Recreation Visitor Days of use (RVD) and the implied demand when use and capacity are compared. See the Chapter 3 tables of Projected RVD Use, Developed Recreation Summary, People-At-One-Time By Recreation Opportunity Spectrum Class, and Current Recreation Use and Capacity.

Topic #R201

How will the popular areas that receive heavy public use and those areas special to certain user groups be managed? There are many special areas through out the TNF which must be placed in a different management category to ensure protection of their special qualities. These areas include: a. Boca Reservoir, b. Bowman Lake Area, c. Bullards Bar Reservoir, d. Castle Peak Roadless Area - especially Round Valley, e. Duncan Canyon Roadless Area - especially in the vicinity of the Western States Trail, f. Grouse Lakes Roadless Area, g. North Fork American River and Roadless Area, h. North Yuba River Canyon, i. Lakes Basin Recreation Area - Roadless Area, j. Sierra Buttes Area, k. Loch Leven Lakes, l. Magonigal Lakes Area, m. Rock Creek Nature Area, n. Shirttail Canyon, o. Stampede Reservoir, p. numerous scenic backroads and hiking trails.

Response #R201

All the areas listed above are some of the most popular or special places on the TNF. Many of the areas listed are distinct enough to have their own Management Area and management direction has been developed for their recreation and scenic qualities. Generally the emphasis has been to identify visual quality objectives of Retention or Partial Retention and for some of the more remote areas to designate the areas as SPNM or SPM for their recreation opportunity spectrum classification. All areas mentioned by the public during the public response period have been reviewed to ensure proper recreation direction, visual quality objectives and ROS classes have been considered in coordination with all other resource concerns. In some cases other resources have been emphasized which can effect what level of visual quality or ROS class is set for an area. Refer to Chapter V of the Forest Plan for the actual management direction for each of the areas.

Topic #R202

Management activities (road-building, logging, grazing, mining), near all TNF recreation facilities is reducing the quality of the recreational experience through degradation of visual quality, increased disturbance, and air, sediment, and noise pollution. This must be clearly disclosed in the DEIS.

Response #R202

The environmental impacts of concern listed above are disclosed under the specific topics such as visual quality, air quality, etc. These impacts are not discussed again under developed recreation and only summarized under dispersed recreation. The Forest considers this adequate because the above potential impacts will not significantly impact developed sites. Therefore the developed recreation discussion in chapter 4 of the DEIS emphasizes the difference of alternatives in regards to the amount (capacity) of recreation facilities to be provided and the ability to meet demand. In dispersed recreation there is discussion of the recreation opportunities available (ROS class), the quality of the recreation experience, and how logging and road building activities could effect the quality of the recreation experience.

Topic #R203

The Plan violates 36 CFR Part 219.19(a)(4) by failing to evaluate access and dispersal problems of hunting, fishing and other visitor uses.

Response #R203

Access and dispersal of hunting, fishing and other visitor uses was not identified as a problem for fish and wildlife resource management. Therefore there is no information displayed in the plan on this issue.

Topic #R204

The planning documents violate 36 CFR 219.21(a)(1) by failing to identify and disclose the physical and biological characteristics that make land suitable for recreation opportunities.

Response #R204

Your concern is correct that there is no specific disclosure of the physical and biological characteristics that make land suitable for recreation opportunities. In the FEIS in Chapter 3 under Recreation there will be a paragraph added that addresses this concern.

Topic #R205

The outputs of each alternative are not linked by substantive management practices to the protection and enhancement of the recreation and visual resources.

Response #R205

The Standards and Guidelines and Practices for recreation and visual resources are based on Regional and National direction contained in the Forest Service manual and handbook 2300 sections. These standards and Guidelines and Practices are completely linked to the level of protection and enhancement that a given alternative will provide. The outputs do not spell out the level of protection but indicate the levels and acres at which the various aspects of recreation and visual resources will be managed for each alternative. The level of protection and enhancement is defined in the Standard and Guidelines and Practices in the beginning of Chapter V.

Topic #R206

The discussion of recreation (DEIS 3.52, 4.48 DLRMP 1112) in the planning documents fail to assess the biological and physical properties preferred by the users of the Forest. Visitor recreation use in the general forest zone is currently about 60% of the total use: (DEIS 3.52) The Plan must provide for the maintenance of a forest that meets the biological, physical, and visual qualities preferred by the public.

Response #R206

The combination of ROS class recreation opportunities and visual quality objectives identify the key factors in regards to recreation preferences for certain settings. Beyond these broad categories user preferences can vary so widely and be so specific that it is difficult to evaluate those needs against various alternatives. The alternatives provide a range of different recreation setting emphases that can be evaluated in terms of how well they provide for a broad range of recreation opportunities. The selected alter-

native represents the best range of recreation opportunities possible consistent with meeting other resource management goals and objectives.

Topic #R207

The Forest needs to provide appropriate management direction and protection for recreation/interpretation/education corridors for the 1-80 State Pioneer and Gold Rush corridor and Highway 20 corridor within the Tahoe National Forest.

Response #R207

The concept of State Heritage corridors, incorporating both State Highway 20 and Interstate 80 through the TNF, is consistent with the overall management direction found in the Forest Plan. These corridors provide an opportunity to interpret multiple use activities such as grazing, timber management, and different land uses, as well as heritage resources which abound in this area of the Sierra Nevada. The Forest Plan includes specific management area direction for both the Highway 20 and I-80 corridors that will maintain scenic and heritage values while allowing other land uses and management activities. The potential for public interpretation of both land uses, heritage values, and management activities will be retained.

Topic #R208

The mixing of PAOT's and RVD's in one presentation (Draft Plan, pg. 1114) raises, but fails to answer, the question of use as a percentage of capacity. Table 1111 could be strengthened if it were expanded to address this question.

Response #R208

You raise a good point, however, the point of chapter III in the Forest Plan is to summarize the discussion in the EIS under chapter 3 the affected environment. In the DEIS and EIS the same information is presented as to existing use and PAOT capacities in chapter 3. The relationship of capacity to use is addressed where appropriate in chapter 4 Environmental Consequences with backup tables.

TRAILS

Topic #X001

Restrict OHV's from Grazing Areas.

Response #X001

O W traffic can be restricted if necessary to eliminate conflicts with grazing uses. A better solution would be to initiate a cooperative effort between the livestock permittee and the O W user to jointly resolve the conflict

Topic #X002

Non-motorized recreation should have priority over motorized vehicles on trails.

Response #X002

The National Forests are to provide recreation experiences for a variety of publics. Both motorized and non-motorized experiences are needed and should be provided for. The Plan provides for both uses per the Standards and Guidelines.

Topic #X003

Existing OHV areas should remain open. No new routes should be built. Restrict OHV's to existing routes.

Response #X003

Open O W use is not always the answer to a good recreation user experience for all recreation users. A designated loop trail concept may require some additional routes to be developed along with the use of existing trails. Existing O W travel routes in newly designated routes only will not be closed unless by Forest Supervisor's order due to environmental concerns etc.

Topic #X004

Limit OHV use to designated roads and routes only.

Response #X004

We don't believe this is necessary on all lands within the TNF Forestwide standards/guidelines #5 on Page V-14 provide for necessary restrictions when needed. 405,000 acres on the TNF are designated as Designated Routes Only while 142,000 acres are classed as Open Areas.

Topic #X005

Prohibit OHV's from Scenic Trails.

Response #X005

Any motorized traffic is prohibited on designated National Scenic Trails by law.

Topic #X006

Prohibit OHV's around campgrounds.

Response #X006

We agree. Our current policy is to prohibit the use of OHV riding in the campgrounds. However, there is a need to allow reasonable access to and from the users campsite to areas where O W use is provided.

Topic #X007

Prohibit all OHV use until enforcement controls can be utilized through Green Sticker monies.

Response #X007

Law enforcement dollars are available from State grants in FY89 and we plan to use some of the funds to increase our enforcement effort.

Topic #X008

Prohibit OHV's due to wildlife disturbance.

Response #X008

The proposed O W management described in the Forest Plan has considered the special needs of wildlife in developing any restrictions on O W use. The Plan provides for seasonal closures to protect key habitats during key periods of the year as an example, to minimize impacts on wildlife.

Topic #X009

Keep OHV trails open on the following specific trails:

- a) Lower Lindsay Lake to Penner Lake
- b) Fordyce and Signal Peak 4x4 trails to Meadow Lake
- c) Rubicon Trail
- d) Road to McKinstry Lake

Response #X009

Fordyce will remain open; the trail to Signal Peak goes through private land and we have not been

Recreation (Trails)

able to secure a right-of-way. The Rubicon Road is classified as an OHV route where the TNF has jurisdiction. The road to McKinstry Lake is not on the TNF.

Topic #X010

Reopen OHV trails

Response #X010

Some trails are being reopened on the Foresthill area and near Truckee in the Prosser Lake area. Any activities will be in compliance with the Forestwide Standards/Guidelines and specific Management Area direction.

Topic #X011

Prohibit OHV's in environmentally sensitive and roadless areas.

Response #X011

We agree with the need to protect our most fragile areas from OHV use. We have developed specific standards and guidelines (#s 5 & 6) to provide the means to close areas where use is incompatible with environmental protection. Some sensitive areas are closed by existing law. OHV's are permitted on some trails in Roadless areas.

Topic #X012

Reduce the amount of designated routes and other restrictions.

Response #X012

In the final Plan, the number of acres for designated OHV routes was increased 52% while the number of acres of open areas was decreased 70%. The change was made to provide greater environmental protection and better administration to accomplish management objectives. Forestwide Standards/Guidelines #6 on Page V-14 provide may be implemented as needed.

Topic #X013

Close the area around the Alpine Meadows subdivision to OHV's.

Response #X013

Management of this area includes both summer and winter OHV on Designated Routes only.

Topic #X014

The county road through Cedars should not be used as an ORV route

Response #X014

This road is under Nevada County jurisdiction and the Forest Service does not have the authority to limit use on a County roadway. The County does have restriction on this road prohibiting some OHV uses

Topic #X015

Against OHV's in specific areas:

- a) Grouse MA
- b) Castle Peak
- c) Cedars MA
- d) Snow MA
- e) Mt Lola area

Response #X015

The use of OHV's are controversial amongst some forest users and closure of any areas on the Forest result in controversy with long time OHV users. The TNF has attempted to provide a balance of use between motorized and non-motorized uses. The objective is to provide for OHV uses where soil and water resources will not be harmed and in a manner that is compatible with most other uses of the Forest.

Grouse MA - Summer OHV is closed; winter use is open.

Castle Peak - This area is favored by both motorized and non-motorized recreationists. To reduce conflicts, OHV's are restricted to designated routes only in the summer. In the winter the area is open with the exception of Castle and Round Valleys.

Cedars MA - both summer and winter the area is open on Designated Routes Only.

Snow MA - This area will provide for OHV on Designated Routes Only with seasonal closures to minimize impacts on wildlife.

Mt Lola - Summer use is on Designated Routes Only; winter use is open.

Topic #X016

Close roads to 4WD and off-road vehicles

Response #X016

This can be done where damage is unacceptable by the Forest Supervisor under Executive Order 11644 as amended by EO 11989 to protect resources against

adverse affects and under regulations to protect public safely.

Topic #X018

Close Forest to OHVs.

Response #X018

We don't agree We believe there are areas where O W use can occur without unacceptable resource damage and in a manner that is compatible with other resource uses.

Topic #X019

Non-support of increasing SPNM and supports more OHV use

Response #X019

The TNF provides many lypes of recreation. 69% of the TNF is open to OHV's with 3302 miles of designated routes Future plans include the development of an intensive Forest Trails plan to provide specific management direction and to identify needs for each trail on the Forest.

Topic #X020

Support Alternative I because it provides for the maximum use of SPM and motorized roads.

Response #X020

Please see the Final EIS, Plan, and Record of Decision for rationale for selecting the Preferred Alternative.

Topic #X021

Keep Forest open for OHV in use all areas.

Response #X021

This is not possible because of existing laws and the need to protect Sensitive watersheds and to reduce conflicts with other resources and forest users.

Topic #X022

Support open use for snowmobiles:

- a) In Sagehen area
- b) Tahoe City to Gold Lake
- c) Rubicon Trail to Meadow Lake

Response #X022

We agree, the Sagehen area will be open to snowmobiles.

There is considerable private land where rights-of-way need to be acquired and relocation of this route is needed. A closer look at the problems will be taken when the Forest Trails Plan is developed

The Rubicon Trail to Meadow Lake route has similar problems as described for the Tahoe City to Gold Lake route.

Topic #X024

Against snowmobiles in.

- a) Grouse MA
- b) Castle MA
- c) Cedars MA
- d) Snow MA
- e) Mt. Lola area

Response #X024

Again, snowmobiling is a legitimate recreational use of the National Forests where it can occur without causing undo resource damage or create significant conflicts with other resource values or forest users. We believe snowmobiling use in these areas can be accommodated without causing unreasonable damage.

Grouse MA-open to O W winter use.

Castle MA-Designated routes only except for lower portion where its open.

Cedars MA-open on Designated Routes only.

Snow MA- open on Designated Routes only

Mt Lola-open to O W winter use.

Topic #X025

Equestrian use should be regulated on Five Lakes Trail.

Response #X025

Commercial use is currently regulated. A Wilderness Management Plan will be developed within two years after implementation of the Forest Plan and non-commerical horse use will be analyzed and controls established, if necessary.

Topic #X026

Equestrian use must be regulated.

Response #X026

The Forest Service has the authority to regulate horse use where where necessary.

Topic #X027

Do not eliminate any equestrian trails.

Response #X027

We are not proposing to eliminate any equestrian trails with this Plan. The Forest Trails Plan to be developed subsequent to the Forest Plan will analyze all trail uses and needs. This Plan will be done with full public participation.

Topic #X028

Need to monitor the impact of the use of mountain bikes on trails.

Response #X028

We agree. The Forestwide Standard/Guidelines and the Monitoring Plan provides for this.

Topic #X032

Restrict mountain bike use on Five Lakes Trail.

Response #X032

It is currently closed to mountain bikes by a Forest Supervisor's order. This trail receives heavy use and there have been several instances where actual collisions have occurred between bikers and hikers. The trail is closed to mountain bikes for public safety reasons.

Topic #X033

Controls on OHV noise levels needed.

Response #X033

There is a state law that does this. Training of Forest Service O W specialists is currently being done to enforce this law.

Topic #X034

Needs a policy in FEIS for OHV on foot trails.

Response #X034

OHV use is regulated by zone classification. Many trails in open OHV zones are closed to OHV by Forest Supervisors orders.

Topic #X035

Close access to National Forest land for hiking.

Response #X035

Hiking is a legitimate recreation use of the National Forest.

Topic #X036

Reconstruct existing OHV routes so all vehicles can use them.

Response #X036

Mixed use is allowed on many OHV trails. Some are not located or designed where this would be possible. Costs would be prohibitive in many cases. Converting a motorcycle trail to an ATV trail or an ATV trail to a jeep trail could fall in this prohibitive situation.

Topic #X037

Separate OHV trails from other trails when designating proposed construction and reconstruction.

Response #X037

We agree This is done because of differing needs of recreationists and the types of experiences people enjoy.

Topic #X038

Against competitive recreation events on the National Forests.

Response #X038

For the most part, competitive sporting events can occur on the National Forest. Wilderness policy prohibits competitive events. The Western states and Tevis Cup events are an exception to this policy due to the history of the events started before the Wilderness designation.

Topic #X039

Plan must address the Western States and Tevis Cup trails, their historic and scenic values, and evaluate both trails for classification as a National Historic, Scenic, or Recreation trail. The Western States Trail has significant historical value and should be designated as a National Historic or Scenic trail.

Response #X039

The Plan does address the possible nomination of the Western States Trail (WST) and the Tevis Cup

loop for possible nomination to the National Trails System. We have determined the Trails do not qualify, in our view, for National Historic or National Scenic classification, but do qualify as National Recreational Trails. The Plan nominates both trails to be designated as a National Recreation Trail as soon as rights-of-way are secured. See EISA.

The Forest Service recognizes that other groups have reached a different conclusion relating to the historic significance of the trails. We recognize that different interpretations of history and criteria for classification are entirely appropriate. This Plan is not intended to preclude such designation if deemed appropriate by Congress.

Topic #X040

Plan shows WST trail in wrong area (089 French).

Response #X040

We agree. This is corrected in the Final Plan.

Topic #X042

Provide a separate map showing the Forest trail system.

Response #X042

This will be done when the Foresiwide Trails Plan is completed.

Topic #X046

Initiate the Adopt-a-Trail Program on Fordyce Creek and Rubicon Trail, Signal Peak to Bugle Lake, and 4x4 to McKinstry Lake, Meadow Lake area.

Response #X046

These trails are currently under the adopt-a-trail program. Most have been adopted by Cal 4 wheel Drive 4x4 clubs.

Topic #X047

Consider the following as Specific OHV Routes:
N-S Trail to include entry to Poker Flat and Hawley Lakes, Gold Valley-Downieville to Craycroft Ridge, Wild Plum to Haypress Meadows, Perrazzo Meadows to Bear Valley, and White Rock to Paradise Lake. Soda Springs to Cedars, French Meadows to Ellicott Bridge (Eldorado NF), Lower Lake to Penner Lake, Gold Valley to Downieville, Lower Lindsay Lake to Penner Lake, Gold Valley to Downieville, access to Meadow Lake N/S trail

Response #X047

The Trails Plan will evaluate possible routes for the North-South trail as envisioned by the State Parks and Recreation Department. The routes suggested above will be considered along with other alternatives for a north-south connecton.

Topic #X048

Provide for more nature and handicap trails.

Response #X048

This need is recognized and will be addressed as opportunities are available. Currently, we have the following Nature trails on the Forest: Woodcreek Camp, Glacter Loop, Chapmen Creek, Rock Creek, Big Trees, Donner Picnic Site. The only wheelchair accessible trail is located at Sugar Pine Reservoir. The Independence Trail, not on National Forest System land is off highway 49.

Topic #X050

Plan should consider the effects of California Emigrant Trail becoming part of the National Historical Trail System.

Response #X050

The California Emigrant Trail has been designated a National Historic Trail. It will be managed according to a plan being prepared by the National Park Service and in accordance with the National Trail System Act. The effects of designation were disclosed in an Environmental Assessment prepared by the National Park Service.

Topic #X051

Restore old historic abandoned trails with CCC crews.

Response #X051

This is good suggestion that we are currently looking into. CCC crews or volunteer groups could help accomplish this.

TOPIC #X052

Identify, sign, reconstruct, and maintain all historical trails: Sierra County: Sierraville Webber Lake and Mt. Lola; Coburn Lake and Berry Lake; Alder Creek, Lavazzola Creek, Poly Creek, 2nd & 3rd Divide; Empire Ranch and Gold Valley: Alleghany, Downieville and Deer Creek, Ramshorn to Hall Ranch Sta., Wild Plum, Haypress, Goodyear's Bar. Ruby Mine

Recreation (Trails)

Response #X052

Please see Response #X087, paragraph one.

Topic #X055

Designate and protect Western States Trail as a National Recreation Trail

Response #X055

We agree. The Plan recommends designation as soon as rights-of-way are obtained..

Topic #X056

Prohibit any future development of the following areas: Alpine Meadows, Bear Creek, Scout MA, Truckee River MA, Coldstream Valley, Tinker's Knob.

Response #X056

The Plan recognizes the need for appropriate management of sensitive areas. See the Management Area direction for specific management direction for these areas.

Topic #X057

Protect and maintain all hiking trails.

Response #X057

See response to the following topic, X058.

Topic #X058

Do not eliminate any (hiking trails) and do not convert to OHV trails.

Response #X058

The Plan recognizes the need for hiking trails as well as the need for horse, nature, handicap, and OHV trails. The Plan provides for a mix that best meets the demand for all types of trail uses.

Topic #X068

Utilize logging roads for trails

Response #X068

This is done where the roads complement the Forest Trails program. Not all logging roads are on locations suitable for trail uses.

Topic #X069

Don't require Wilderness Permits into Five-Lakes.

Response #X069

The need for Wilderness Permits will be addressed when the Wilderness Management Plan is completed. It may be necessary to go to a permit system to protect wilderness values

Topic #X070

Establish a trail permit with fee to help pay for maintenance.

Response #X070

This has been considered, but dropped for the time, because we felt the cost to implement would be higher than the benefits of the program. This could change in the future as demand increases

Topic #X071

Reconsider the proposal of the Tahoe Pacific Trail.

Response #X071

Because of the proposed location, it would be very difficult to obtain the necessary rights-of-way across private lands. There doesn't appear to be great support for the trail at this time, and many of the sections would not receive much use, in our opinion.

Topic #X072

Keep trails out of meadows.

Response #X072

We agree and currently are moving trails where located in meadows. Future trail location will be routed to miss meadows, wherever possible.

Topic #X073

Keep grazing areas away from trails

Response #X073

In many cases, livestock grazing was occurring before the trail. In fact, since livestock grazing is a legitimate use of the National Forest, as well as recreation, we feel both uses are generally compatible if both are managed properly, and if the users express a willingness to work cooperatively to solve specific conflicts.

Topic #X077

Restrict additional trails in Granite Chief.

Response #X077

We expect to determine trail needs along with other resource needs during the development of the Wilderness Plan, scheduled for completion two after the Forest Plan is implemented.

Topic #X078

Restrict additional trails in American River Canyon.

Response #X078

This is addressed in the North Fork of the American River study and will also be analyzed in the Forest Trails Plan to be completed by 9/1/89.

Topic #X081

Plan (IV-19) states only \$3,000 for trails construction/reconstruction. This is not enough.

Response #X081

This was a misprint. We agree \$3,000 is not sufficient. The Final Plan provides an adequate budget for the trails program, in our view.

Topic #X085

Reconstruction of existing trails should have priority over new construction.

Response #X085

We normally would agree, although there are situations where demand is so great that some new construction would receive priority.

Topic #X086

- A. *What are the environmental effects of new OHV trail construction.*
- B. *OHV use is causing resource damage to the Long Valley Trail.*
- C. *OHV use is causing resource damage to the Barker area (vicinity of Bear Lake).*

Response #X086

A. The environmental effects of any new OHV project are addressed in the project environmental analysis conducted in compliance with NEPA. There specific impacts are not addressed in this programmatic EIS, although the broader impacts of the entire Trails/

OHV program were. B. The Long Valley Trail is not a Tahoe National Forest System trail. It is an old trail that traverses through private lands. There are locked gates prohibiting public access to this area. C. The O W trail in the Barker area is maintained by volunteers from a 4 wheel drive club. A Forest Service rehabilitation project was completed in this area in 1987 and there are several other rehab projects scheduled for this area for the next couple of years through green sticker funding.

Topic #X087

The DEIS does not discuss and disclose the environmental impacts of the proposed action and alternatives on the trail system of the Tahoe

Response #X087

A Forest goal concerning the TNF trail system has been added to the final Forest Plan. This goal addresses the Forest trail system and what future trail recreation opportunities are planned. A Forest Trails Plan and environmental analysis conducted in compliance with NEPA, will be completed after completion of the Forest Plan. The Forest Plan did address the impacts associated with the proposed trails plan by alternative in the FEIS on a programmatic basis. The site specific impacts will be addressed in the environmental analysis and documented appropriately for each trail project. The Trails Plan will be tiered to the Forest Plan. All trails, existing and future, will be managed using the standards, guidelines, practices, and prescriptions listed in the Forest Plan. The funding for trail maintenance is currently sufficient to maintain all Forest trails to a level where trail deterioration will not occur. Where isolated trail use on less significant trails is almost non-existent it is sometimes necessary to abandon trails in order to spend trail maintenance dollars more prudently.

Topic #X088

Trails are disappearing because of logging roads or just not being maintained. This is reducing the quality of the recreational experience

Response #X088

See Response X087.

Topic #X089

What are the effects of the proposed action and alternatives on the North Fork of the American Wild and Scenic River on the system of hiking trails in the vicinity.

Recreation (Trails)

Response #X089

The FEIS describes the effects of the alternatives on the trails systems. The Preferred Alternative provides full protection of the trail system serving the American Wild and Scenic River.

Topic #X090

The DEIS page 3 52 and 4.48 fail to include discussion of the Tahoe National Forest's trail system. It does not show potential impacts that proposed action or alternatives would have on trails.

Response #X090

Discussion on the trail system in relation to the impacts of the different alternatives can be found in the FEIS in Chapter 4, Facilities.

Topic #X091

Cumulative impacts of increased motorized vehicle use on the native flora and fauna and increased collision rate of motorized vehicles and native animals, disruption of the animal populations, breeding migration corridors and the destruction of native plant communities is a problem.

Response #X091

All proposed OHV trails are analyzed through the environmental analysis, conducted in compliance with NEPA before any trail project is approved. This analysis provides the mitigation necessary to construct the project in an environmentally sound way.

Topic #X092

- A. The Plan and the EIS lack detailed information regarding trails.
- B. There are contradictions in trail mileage listed in the Plan.
- C. Map showing all system trails needed in Plan.
- D. Can a trail system be evaluated in terms of the present Plan without the Dispersed Recreation Travelways EA?
- E. Table 4.12 in the DEIS shows trail mileages of construction and reconstruction lumped together.
- F. Each Management Area prescription should discuss in detail those trails located in the Management Area.
- G. The Plan does not discuss trail construction and maintenance levels and standards.

- H. A detailed analysis of the interaction between the proposed development of the road system and the trail system should be provided in the Plan.

Response #X092

- A. We disagree. We believe the DEIS and the FEIS both provided sufficient information on the Tahoe's trail program.
 - B. We agree. These have been corrected.
 - C. The level of detail needed to display all the TNF trails is beyond the intent of this Programmatic Plan. The Trails Plan will provide the detailed map when completed.
 - D. We believe the level of analysis conducted in the Forest Plan was and is adequate for the decisions to be made. Additional analysis will be conducted through the development of the Trails Plan.
 - E. That correct. The table includes both construction and reconstruction.
 - F. Discussion of each trail in each Management Area is beyond the scope or intent of the Forest Plan, in our judgement. There are exceptions where special conditions or situations warrant.
 - G. All planned trail constructions in accordance with Forest Service Handbook, FSH 2309 Trails Management Handbook; Standard Specifications for Construction of Trails, EM-7720-102; R-5 Trail Maintenance Specifications. Copies are available for review at the Forest Supervisors Office, in Nevada City, California and other Forest Supervisors and Regional Offices.
 - H. Each interaction between a road and a trail will have to be analyzed individually on a case by case basis.
-

Topic #X093

Collect baseline data to develop standards and the amount of change acceptable for maintaining water quality and soil productivity for the OHV plan

Response #093

Baseline data not needed. Standards are set by Regional Water Quality Control Board. Refer to #H037. Soil productivity standards have been developed for the final forest plan. Refer to Standards and Guidelines #55.

WILD AND SCENIC RIVERS

Topic #R001

The North Yuba, Middle Yuba, South Yuba and any potential rivers should be designated as Wild and Scenic (or Recreational) Rivers. In these drainages, don't allow timber harvesting, roadbuilding, or hydroelectric projects and preserve these areas for recreation and scenic values.

Response #R001

The Tahoe's Land Management Plan decision is not to recommend any additional rivers for Wild and Scenic status at this time. Chapter 3 in the *EIS* describes the general situation of potential Wild and Scenic rivers and Appendix E documents the evaluation of the South Yuba, Middle Yuba, Canyon Creek, Lavezzola Creek, North Fork of the Middle Fork American River, and the Middle Fork of the American River. The South Yuba and Middle Yuba Rivers were determined to be eligible for Wild and Scenic river consideration. The North Fork of the Middle Fork, the Middle Fork of the American River, Canyon Creek, and Lavezzola Creek were determined not to be eligible for further Wild and Scenic river consideration.

In July, 1987, as part of the second consultation phase of the NPS River inventory, the Regional Forester recommended to the National Park Service against the addition of North Yuba River to the inventory of listed rivers. The NPS did not add this river. The Regional Forester's recommendation was based on the following information supplied by Tahoe National Forest personnel.

The North Yuba River is covered with mining claims for over 80% of its length. Some 10 years ago, the Forest Service requested a mineral withdrawal on each side of Highway 49 which met total opposition from the public and Sierra County officials.

Even if it could be accomplished, the rights of the existing claimants would have to be recognized, making it almost impossible to manage under scenic or recreation river objectives. Power withdrawals have been placed in many sections of the North Yuba River.

The Truckee River will be evaluated for eligibility and suitability in the next few years in coordination with the Lake Tahoe Basin Management Unit. The upper Rubicon River, above Hell Hole Reservoir, will be evaluated in coordination with the Eldorado National Forest.

Topic #R002

On page xxv of the Summary DEIS it indicates that the former Heritage Conservation and Recreation Service conducted an assessment of the Middle and South Yuba Rivers. This is not correct as the USFS conducted the assessment.

The assessments of the Middle and South Yuba Rivers, contained in Appendix E, appear thorough and objective. Although these assessments conclude that neither river is eligible for the National System, we (BLM) recommend that future Forest management decisions affecting these rivers preserve the natural values of these two river corridors to the greatest extent possible.

Response #R002

It is correct that the USFS did the assessments of the Middle and South Yuba Rivers. The error in the Summary will be corrected in the FEIS.

We recognize the recreational values of the Middle and South Yuba Rivers. Significant portions of both rivers will be managed for an ROS class of Semi-primitive Motorized. In the appropriate management areas there is direction to protect Wild and Scenic river values.

Topic #R003

A frequent response was that the North Fork American River canyon generally lying between the north and south rims should be maintained in its present condition. Reasons included the potential for accelerated runoff, erosion or other watershed impacts from management activities especially logging and road construction, the desire to preserve the area as a roadless area resource, potential physical downstream effects on the wild river, the inadequacy of a narrow river corridor for preserving Wild River integrity, the effect of land management activities on visual quality as viewed from the wild river, other locations within the canyon and from several viewpoints not within the management area.

Measures suggested for meeting expressed concerns included nomination for designation for wilderness under the 1964 Wilderness Act, designating the area as semi-primitive nonmotorized (SPNM), a prohibition of timber management and/or road construction, and prohibition of clearcutting, or a reduction in timber management intensity.

Recreation (Wild and Scenic Rivers)

Response #R003

The subject area between the north and south rims was included in the following management areas in the proposed Plan (1985):

- 1 Loch Leven (076)
- 2 Cedars (079)
3. Snow (081)
4. North Fork (082)
- 5 Wabena-Steamboat (083)
6. Humbug-Sailor (084)
- 7 Sugar Pine Point (085)

The North Fork Management Area (082) is the area designated Wild River by Congress. The VQO remains 'Preservation: which precludes activities which modify the natural character of the landscape.

The Snow and Sugar Pine Point Management Areas (MAs) lie north of the North Fork MA which is the Wild River area including its corridor. Management described for both of these MAs in the proposed and final Plans is in harmony with the concerns expressed and the resolutions suggested except that they will not be nominated for inclusion in the Wilderness system. The exception to making a wilderness nomination applies to all of the MAs listed above. See Responses to Wilderness in this same appendix for a discussion of nominating additional area for the wilderness designation.

The Humbug-Sailor and Wabena-Steamboat MAs lie south of the river. As mapped in the proposed Plan, both were large, diverse areas including all of the unroaded canyon which abuts the Wild River boundary on the south as well as developed areas such as on the Foresthill Divide west of the Foresthill Divide road, Humbug Ridge, the upper French Meadows basin and the roaded area in Grayhorse Valley. The topographic character varies from nearly flat in places on the Foresthill Divide to very steep in the portions of the inner canyon of the North Fork. Management prescribed for these two MAs in the proposed Plan is by necessity also diverse. Management area diversity and management emphasis diversity may have caused confusion and encouraged the public to assume that inappropriate management activities would be allowed in sensitive steep sloped areas.

A new MA, American (087), has been added to the final Plan to address the steep slopes along the North Fork of the American River. It abuts the south boundary of the Wild River corridor and includes the inner canyon portions of MA 083 and MA 084. Resource management emphasis includes maintain-

ing a semi-primitive nonmotorized natural forest setting. Timber management is unregulated. Management intent in this newly formed MA is comparable to the Snow MA (081) on the opposite side of the river.

A change made in the remaining portion of the Humbug-Sailor MA is that a "Retention" VQO will be managed for in the foreground of Sailor Meadow. Three of the Tahoe Spotted Owl Habitat Areas were established within this MA.

For more detailed information refer to the Forest Plan direction, Chapter V, and MAs 087 (American), 076 (Loch Leven), 079 (Cedars), 082 (North Fork), 083 (Wabena-Steamboat), and 084 (Humbug-Sailor).

Topic #R004

Segment 1 & 2 of the Rubicon should be designated as 'Wild' under the National Wild and Scenic Rivers Act. Timber harvesting, road building, and hydroelectric projects should not be permitted.

Response #R004

The Rubicon River is located on, and was studied by, the Eldorado National Forest. The Forest Supervisor of the Eldorado can provide further information regarding their analysis and conclusions.

Topic #R005

Wild and Scenic Rivers: The Middle Fork of the Yuba River contains unique and unusual biological qualities not identified in the DEIS. A large population of the rare and endangered Cantelow's Lewisia (*Lewisia cantelowii*) grows with a spectacular community of uncommon plants in the canyon of the Middle Fork of the Yuba River. Timber cutting and road-building must not occur in this canyon until botanical surveys can be conducted and its wild and scenic qualities assessed.

Response #R005

The Middle Yuba River has been assessed for Wild and Scenic River eligibility and it was determined that outstandingly remarkable values existed and therefore was eligible. *Lewisia cantelowii* is on the Sensitive Plant list and is known to exist along the Middle Yuba River. The existence of this plant and associated species do not constitute an outstandingly remarkable value. However, as a sensitive plant, this species will be protected from timber cutting and road building activities as part of the sensitive plants program.

Topic #R006

The DEIS violates 40 CFR 1502.15 and 1502.16 by failing to discuss and disclose the special biological and recreational qualities of each of the rivers in the project area, the effects of current management on these rivers, and the impacts of each alternative including the proposed action on their unique and outstandingly remarkable qualities. Accordingly the FEIS must contain the information missing listed above.

Response #R006

The DEIS did address the North Yuba, Middle Yuba, and South Yuba Rivers but did not address any other major rivers on the Tahoe National Forest. The FEIS addresses all three forks of the Yuba River and also considers the Truckee, North Fork of the Middle Fork American River, Canyon Creek, Lavezzola Creek, and the Middle Fork of the American River. See ap-

pendix E of the FEIS for details. The Truckee River will be studied for Wild and Scenic River eligibility within 3 years of the Forest Plan's approval. The upper Rubicon River will be studied for eligibility in cooperation with the Eldorado National Forest. The other rivers were determined not to have outstandingly remarkable qualities even though they had many notable features. Because of this determination none of these rivers are specifically mentioned in regards to impacts by alternative or effects of current management.

The North Fork of the North Fork American River and several other small rivers were not formally evaluated by the ID team because it was considered to have fewer qualities than the rivers that were formally evaluated and found not to have outstandingly remarkable values. As noted in Response #R004 the Rubicon River is primarily on the Eldorado National Forest and was studied by that Forest.

WILDERNESS/ROADLESS AREAS

Topic #R010

People support the Citizen's Alternative, which would emphasize the more primitive recreation opportunities as well as visual quality.

Response #R010

Alternative E, the amenities alternative is similar to the Citizens Alternative, and it was considered in the draft. The Citizens Alternative was modeled, analyzed, and included in the final EIS and Plan as the NMK Alternative.

The Management Plan does provide additional areas of semi-primitive nonmotorized opportunities in the North Fork American River Canyon. Further opportunities for semi-primitive motorized recreation opportunities have been added in several management areas, including the Middle Yuba, South Yuba, Middle Fork American River, and North Fork of the Middle Fork American River.

Visual quality objectives have been changed in the areas added for Semi-primitive nonmotorized and semi-primitive motorized recreation opportunities to be consistent with more primitive recreation activities. In the Final Plan there has been an effort to increase VQO's in several areas. See 'Visual' response #R055 for detail on how the Final Plan has responded to this concern.

Topic #R011

No additional areas should be designated as Wilderness, Wild and Scenic, or be managed as roadless areas.

Response #R011

No additional Wilderness or Wild & Scenic Rivers are provided for in this Plan.

Unroaded areas will be managed for a variety of uses, as indicated by the management area prescriptions of each area. The uses range from full multiple use management to semi-primitive nonmotorized and semi-primitive motorized ROS class designations.

Topic #R012

Grazing should be eliminated from roadless and wilderness areas due to conflicts with recreation values, impacts on meadows in Granite Chief, and economic viability.

Response #R012

Grazing in Wilderness Areas is authorized under the 1964 Wilderness Act. The 95th Congress reiterated that there would be no curtailing of grazing simply because an area is designated Wilderness.

Grazing in a particular wilderness or roadless area is authorized under a grazing permit and associated allotment plan. If unacceptable damage or conflicts occur, the allotment plan and grazing permit will be amended to change the authorization to eliminate and mitigate this problem.

Topic #R013

The Western States Endurance Run and Tevis Cup Ride should be allowed to continue in the Granite Chief Wilderness.

Response #R013

The Western States Endurance Run and Tevis Cup Ride will be allowed to continue in the Granite Chief Wilderness based on the Forest Service Chief's decision of April 12, 1988. See the Granite Chief management area 80 for more details.

Topic #R014

Additional areas should be designated Wilderness and roadless areas considered under RARE II should be included in future Wilderness designation.

Response #R014

On the TNF, Granite Chief, was the only area designated as Wilderness by The California Wilderness Act of 1984.

Other areas were either released for multiple use management or were identified for further study as part of the Forest planning process. All roadless areas on the TNF, including the remaining portion of the Granite Chief Roadless Area, were released for multiple use management.

The release language states that wilderness values need not be reviewed during the development of the first Forest Plan nor must these areas be managed to protect their suitability for wilderness designation. The Congressional committee which dealt with this issue noted that the wilderness option need not be reconsidered until the plan is revised. The Forest Plan follows the intent of Congress in this respect.

The released roadless areas will be managed in a variety of ways. If, upon revision of the plan they still meet criteria for Wilderness, this option will be considered.

Topic #R015

Demand for SPNM and Wilderness recreation is growing faster than the population. This demand was not adequately considered in the plan.

Response #R015

We have recognized that the projected demand for this type of recreation will exceed the supply during the planning period. See the discussion in Chapters 3 and 4 of the DEIS/FEIS under Recreation ROS classes

Significant public interest was expressed over the proposed management of the NFAR. The American MA was created to more clearly distinguish between management emphasis of the steeper inner canyon area and the outer portions of the canyon. The recreation emphasis of the canyon area is semi-primitive nonmotorized. The inner gorge of the North Fork of the Middle Fork American River will also be managed for semi-primitive motorized. Additionally, the Sunnyside, Castle Peak, South Yuba, Middle Yuba, and the Middle Fork of the American River areas will be managed as semi-primitive motorized with vehicles restricted to designated routes. These areas will also provide some opportunities for solitude in natural-appearing landscapes.

Under the California Wilderness Act, all inventoried roadless areas throughout the State were either designated as Wilderness, further planning, or released for multiple use management. The Congress decided that only Granite Chief should be managed as a Wilderness area on the TNF. All other lands were released for multiple use management.

Topic #R016

The planning documents violate 36CFR 219.18(a) by failing to provide for the limitation and distribution of visitor use to protect the Granite Chief Wilderness area from overuse and consequent degradation of the resource. No measured data on visitor use is included in the plan.

Response #R016

Due to the lack of adequate use figures for the Granite Chief Wilderness area, the Forest Plan does not provide for the limitation and distribution of visitor

use. The Plan does provide direction to develop a wilderness implementation plan that will address the issue of limitations and distribution of visitor use. The Chapter VI monitoring plan has an identifier described as Wilderness Carrying Capacity that ensures that there will be follow-up on this issue.

Topic #R017

The ROS allocation discussion (DEIS pg. 3.55) fails to disclose the identity and the special qualities of the undeveloped natural areas in demand for non-motorized recreation.

Response #R017

Your above statement is correct. The FEIS does not identify these areas specifically but there is an ROS map available in our planning files. Also there is quite an overlap of ROS classes of semi-primitive nonmotorized and semi-primitive motorized and the roadless areas which are described in detail in appendix G (EIS). In determining allocations by alternatives the quality of undeveloped natural areas were considered along with other resource objectives.

Topic #R018

Include roadless areas in future wilderness areas.

Response #R018

All roadless areas were considered and released to multiple use management on the TNF except those areas that became Granite Chief Wilderness. Certain of the released areas will remain essentially roadless with ROS Classes of semi-primitive nonmotorized and semi-primitive motorized and those areas could be reconsidered for wilderness in future rounds of planning.

Topic #R019

Wilderness permits should not be required for day use of the Five Lakes Basin area of the Granite Chief Wilderness (MA BO).

Response #R019

Wilderness permits, including those for day use, are an important management tool to understand use levels and to provide users with Wilderness status and management goals. This tool is particularly valuable where wilderness values are threatened by overuse. It is likely that a permit system will be needed to manage the Five lakes portion of Granite Chief and to obtain use estimates for planning purposes.

Topic #R020

Wilderness can be maximized with little reduction in economic efficiency. Willingness to pay scenario is faulty. Forplan cannot adequately address the recreation dollar potential.

Response #R020

We use nationally established 1985 RPA recreation values. These values are established nationally, and modified by the Region to reflect regional situations. The theoretical 'willingness to pay' framework is an evaluation process used to estimate recreation dollar potential. Average willingness to pay values used in the analysis are given by recreation category (wilderness included) in Appendix B, and these are obviously significant. The FORPLAN model, which incorporates these values, effectively provides economic information to Forest planners for use as part of the alternative evaluation process. We believe the proposed mix of wilderness and other resource outputs maximize net public benefits.

Economics is not the only factor used to determine Wilderness allocations. In the case of the TNF, Congress made the determination through the California Wilderness Bill of 1984. This Bill authorized the Granite Chief Wilderness and released the other roadless areas to multiple use management.

Topic #R021

The Forest should not charge Wilderness user fees.

Response #R021

Present legislation does not permit charging wilderness-user fees.

Topic #R022

Wilderness areas **should** be managed for their intrinsic values and left unaffected by man's activities.

Response #R022

Wilderness areas have been specifically set aside as areas untrammelled by man's influences. In this vein, only certain activities considered to be conforming with the Wilderness Act are permitted. For example timber harvests, road building, and motorized use are not permitted in designated Wilderness areas.

On the other hand, grazing and limited mining activities are authorized by this law. Particularly in the case of grazing, Congress has reiterated this intent through the years.

Topic #R023

It is important to retain established access into designated wilderness/roadless areas in order to operate and maintain facilities located there.

Response #R023

Established and legal access to private land or National Forest lands in wilderness will be allowed to continue. Access into roadless areas to operate and maintain facilities would also be allowed to continue. In those roadless areas designated semi-primitive non-motorized in the plan special use permits would be provided for continued access for legitimate uses.

Topic #R024

Provide adequate sanitary facilities at Five Lakes to prevent Giardia.

Response #R024

Provision of primitive toilet facilities would be a last resort after trying user education and attempts to reduce numbers of users. Primitive toilet structures would then be considered for protection of wilderness values but not for convenience.

Topic #R025

Setting aside access for wilderness should be balanced with consumer needs.

Response #R025

Yes, this is one of the major issues wilderness allocation addresses. On the Tahoe no new wilderness areas are proposed but several roadless areas will remain roadless with the designation of semi-primitive non-motorized ROS class. The balance of providing for back country recreation experiences with the consumer wood product demands was considered in the ROS allocation as well.

Topic #R026

In the planning document Chapter III page 13 it states how 'California Wilderness Act...released the remaining roadless areas for non-wilderness uses'. This statement should be clarified to say 'released the remaining roadless areas to non-wilderness or wilderness uses'. Further down on page 13 it says the value of wilderness demand is not quantifiable. Proper decisions about future uses or wilderness uses of roadless areas can not be made without

taking into account demand for wilderness use that is quantifiable

Response #R026

In Chapter III of the plan under Wilderness the Statement has been changed to say " . released the remaining roadless areas to multiple use." Allocation for wilderness for this planning period has already been determined by the California Wilderness Act of 1984. Future determinations for wilderness will try to quantify wilderness demand.

Topic #R027

On page VIII and page 19 the Forest Service erred in stating that the roadless area question "was resolved by enactment of the California Wilderness Act of 1984". We do not believe this to be the case. Public concern for the protection of roadless areas has not abated. In fact the future of these roadless lands are among the most frequently mentioned public issues. This issue should be reinstated in the scope of issues addressed

Response #R027

Your point is well taken Issue #4 Inventoried Roadless Areas has a change in the FEIS to reflect your concern. It now indicates that the wilderness allocation aspect of the issue is resolved for this planning period Multiple use management encompasses a wide range of management options including unroaded recreation opportunities. Therefore, the question of land allocation is still a relevant issue as you propose. This issue is in the scope of issues addressed and was identified as a critical issue as part of the review process of public responses to the Draft Forest Plan and DEIS.

TOPIC #R028

On page 2.14 the statement 'roadless areas are never managed as wilderness based on economics' seems without any basis in fact.

Response #R028

You are right in the sense that economics is always a factor in allocating or managing wilderness The text has been changed to indicate that wilderness is not managed to provide commodity outputs.

Topic #R029

In regards to roadless areas we *should* abide by Congress and drop these areas that were released, and manage for multiple uses.

Response #R029

The California Wilderness Act of 1984 designated some areas as wilderness, other areas to be examined further for wilderness consideration, and made the remaining areas available for a wide range of management options. Just because an area was released for other uses, it does not mean that it will be roaded and logged Other uses such as unroaded recreation may be more appropriate. All appropriate uses have been considered in the Forest Planning process and the final allocation of these uses in the Plan is what we believe is the best mix and balance of these appropriate uses.

Topic #R030

Wilderness areas are only used by an elite few young agile individuals, which represents discrimination against the handicapped and elderly. Therefore, no new areas should be designated as Wilderness.

Response #R030

The Forest Plan provides no new areas for future Wilderness designation on the TNF. Wilderness, however, is considered a valid use of National Forest lands. These areas provide values beyond recreation including grazing and high quality water Research also shows that many people who never visit Wilderness areas vicariously enjoy these areas through photographs and just knowing they exist.

Topic #R031

I support the management emphasis for MA 80 (Granite Chief Wilderness).

Response #R031

There has been a substantial re-write of the direction for Management Area 80 to more clearly define the role that Granite Chief will play in the National Wilderness System The new direction is more specific and will better guide the Wilderness Implementation Planning process

Topic #R032

Any dramatic increase in wilderness areas will result in a loss of timber-related jobs.

Response #R032

In regards to the Tahoe no new wilderness areas are proposed. In allocation of the remaining roadless areas to various uses, including ROS classes of semi-primitive nonmotorized and semi-primitive motorized, we consider the various resource outputs

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such as timber and what relation that may have to jobs We also consider what recreation and other resource values exist in the area to help determine the most appropriate use.

Topic #R033

The Bradley Hut should be allowed to remain as a non-conforming man made structure within Granite Chief Wilderness for the following reasons.

- A) The hut offers a unique winter wilderness experience
- B) The hut has historic value and is important as an emergency shelter.
- C) The hut is near the wilderness boundary and therefore its effect on the overall wilderness values is minimal.
- D) The hut is well-screened and inconspicuous. Therefore its effect on the overall wilderness values is minimal.
- E) Man-made structures have been allowed in other wilderness areas (i.e precedents do exist).
- F) Removal may cause overuse problems at other Sierra Club huts.

Response #R033

The Five Lakes Basin and the hut site were included in the Granite Chief Wilderness The Forest Service is directed to manage the newly established wilderness as prescribed in the 1964 Wilderness Act. Under this Act the Bradley Hut is considered a 'non-conforming facility' and should be removed unless allowed by specific legislation The California Wilderness Act did not exempt this specific hut.

The hut, built in 1957 by Sierra Club volunteers, does not qualify as a historic structure Each 'non-conforming' man-made structure is considered on a case-by-case basis There are few examples where this hut has been used as part of an organized rescue. A decision to allow a man-made structure in one wilderness does not set a precedent for other wilderness areas

The hut will be removed to comply with National Forest policy and the 1964 Wilderness Act as it is not needed for management, protection, or use of the Wilderness.

TOPIC #R034

Restoration of damaged ecosystems. The Forest Service should request budgetary support to rehabilitate worn out campgrounds and to restore

ecosystems damaged from intensive recreation use. My concerns include: Restoration of already damaged ecosystems (i.e., Rock Creek Nature Trail)

Response #R034

The Forest Service requests funds for restoring and repairing damaged watersheds/ecosystems in our annual budget proposal to Congress Funds are also requested for maintaining and improving existing recreation facilities, Specific project areas are identified by District personnel and are prioritized at the District and/or Forest levels Budget support, however, does not necessarily equal that requested

Specifically at Rock Creek In 1985, new bridges were constructed to replace unsafe older bridges In 1986, the Rock Creek Trail was rehabilitated utilizing funds allocated for repairing winter damage In 1987, additional work on the Rock Creek Nature Area was accomplished by Youth Conservation Corps members. Current and future minor maintenance is performed by regular Forest Service employees in recreation and engineering and the California Youth Authority.

The Forest Service is currently working with the Society of American Foresters (SAF), who have collaborated with the California Native Plant Society, Sierra Club, Friends of the Forest, Nevada County Historical Society and the Wildlife Society to improve the interpretive foot trail and also develop a new interpretive driving route.

Topic #R035

Existing roadless areas should be managed for recreation, watershed, and wildlife values without road building and logging.

Response #R035

There are different mixes of management prescriptions for each roadless area. Some areas with high recreational values, such as the Grouse Lakes area, will be managed for non-motorized dispersed recreation without timber harvest. Other areas with high timber and mineral values, but which lack a significant recreation resource, will be managed for timber harvest An example of this area would be land in the Lavezzola Management Area In developing management prescriptions for unroaded area, all the values and demands were taken into account These prescriptions were then developed based on the optimum use of resources. When individual projects such as timber sales are proposed, other values such as watershed, wildlife, and recreation are con-

sidered Measures are taken to mitigate any impacts that may be caused by timber sales.

Topic #R036

Roadless areas should remain unroaded and managed to preserve the old growth and associated climax species. They offer scientific and education opportunities for future generations.

Response #R036

The roadless areas on the Forest have been released for multiple use management which ranges from allocating areas to semi-primitive nonmotorized ROS to full timber management. Many roadless areas have been allocated to several management emphases depending on the capabilities of the area.

TOPIC #R037

More areas including unroaded areas should be preserved for semi-primitive nonmotorized type of recreation, high visual quality, and non-commodity values.

Response #R037

The Forest recognizes the demand for semi-primitive nonmotorized recreation and high visual quality. Because of the public interest, more emphasis will be put on visual quality in certain areas including the corridors along certain trails, and where private land interfaces with the National Forest

Semi-primitive nonmotorized and semi-primitive motorized recreation will be provided in some unroaded areas. The final plan provides for more acres of semi-primitive nonmotorized and semi-primitive motorized than was shown in the draft Plan. The steeper slopes along the North Fork American River, for instance, will be managed for semi-primitive nonmotorized. Additionally, Castle Peak and Sunnyside MA's and the North Fork of the Middle Fork American River will be managed for semi-primitive motorized.

The Forest recognizes, however, that visual quality will diminish during the planning period. During this timeframe, the supply of semi-primitive nonmotorized opportunities will be exceeded by the demand, as is the case with other commodity and non-commodity outputs.

Topic #R038

Roadless areas should remain unroaded. Adding these areas to the timber base adds insignificant amount of land to the base but relatively insignifi-

cant amounts of outputs. This entry is not justified environmentally or economically.

Response #R038

Each roadless area has been evaluated for its various resource capabilities. Certain roadless areas, in fact, do have insignificant amounts of such outputs as timber. However, other roadless areas do have significant amounts of timber and, where economically and environmentally justified, those areas have been allocated to timber management. The Lavezzola area is an example where the Forest Plan has allocated most of the Management Area to timber management and part of the Management Area to semi-primitive motorized. In another example, a significant portion of the the North Fork of the American River is designated to semi-primitive nonmotorized which precludes new roads and regulated timber harvesting.

Topic #R039

The DEIS must display an appendix describing the physical and biological characteristics of each roadless area and give detailed descriptions as to how each area would be managed under each alternative, including the Citizens Alternative.

Response #R039

The DEIS did not have an appendix as requested, but the FEIS has the requested information displayed in Appendix G.

Topic #R040

Irreversible commitments associated with roadless areas include road-building, isolation, and timber cutting. Isolation, as a result of road construction and intensive even-aged timber cutting activities, irretrievably isolates native plant and animal populations.

Response #R040

Irreversible and irretrievable commitments associated with roadless areas was not discussed in the DEIS. A discussion has been added to the FEIS. As specific roadless areas are roaded the areas will be irreversibly committed to timber management and associated roading for at least the short term. The ability to reverse a roaded area to a roadless state would take a considerable amount of time and commitment. Isolation in regards to native plant and animal populations is not discussed but the likelihood of disturbance or destruction to threatened, endangered, and sensitive plant species and their habitat is discussed.

Topic #R041

The permanent loss of recreational opportunities and trails in natural forest, as intensive timber management is practiced in most of the remaining wild and roadless areas, is an important irretrievable commitment of resources.

Response #R041

Yes, there will be an irretrievable commitment of resources to timber management that will affect some roadless area recreation opportunities. A discussion of this commitment has been added in chapter 4 of the FEIS under Irreversible or Irretrievable Commitment of Resources.

Topic #R042

The DEIS violates 40 CFR 150s.15 by failing to discuss the heavy demand for wilderness, primitive, and semi-primitive nonmotorized recreation supplied by the roadless areas, the extreme popularity of these areas with TNF users, and the extent to which current management practices are degrading the quality of the recreational experience in natural- and near-natural environments.

Response #R042

The DEIS does not violate 40 CFR 7502.15 as stated above because the demand for wilderness, primitive, and semi-primitive nonmotorized recreation is discussed under the Recreation ROS section in Chapter 3. The demand discussion centers on the SPNM because there is no inventoried primitive ROS class on the TNF. To clarify these relationships, the FEIS adds a discussion on supply of wilderness, primitive ROS, and the demand for wilderness. There is also a discussion as to how roadless areas relate to the supply of semi-primitive nonmotorized acres. The degree to which management practices can effect wilderness is discussed in Chapter IV under Wilderness by alternative. Effect on roadless areas was not directly documented in the DEIS but is in Appendix G in the Final EIS and under ROS classes in the Recreation section of Chapter IV.

Topic #R043

There is no alternative that fully protects all of the roadless areas from logging, road building, grazing, mining, destructive recreational activities and development.

Response #R043

In the Draft there is a full range of alternatives including an alternative that allocates all the roadless areas to semi-primitive nonmotorized. In the Final, the Citizens Alternative (NMK Alternative) goes further to give as much protection to all roadless areas as possible

Topic #R044

The Plan and EIS fail to meet demands for backcountry recreation. All alternatives provided in the DEIS will fail to meet the demands for semi-primitive nonmotorized by the fifth decade (DEIS 4 59). Alternative A fails to meet the demand by the third decade. Management of the roadless areas for semi-primitive nonmotorized would meet the need for this form of recreation for the next few decades with only a 5% decrease in the annual allowable sale quantity of timber (DEIS 29)

Response #R044

The DEIS and Plan did fail to meet demand in all alternatives by the fifth decade. In the FEIS and Plan one alternative will meet demand into the fifth decade and its merits evaluated. While the TNF will strive to meet demand in all ROS classes for as long as possible, population growth and recreation demand are expected to eventually surpass the Forests ability to meet demand. This is particularly true in the semi-primitive areas where capacities are low to prevent overcrowding and maintain a semi-primitive experience.

Topic #R045

The Plan fails to protect roadless areas in any alternative. The plan allows road building and timber cutting in all roadless areas in all alternatives. Alternative G, which manages the Forest for backcountry recreation and allocates the roadless areas to prescription #2 which states 'low standard roads may be developed for harvesting but are closed to public use.' The Plan must provide complete protection for all areas managed for semi-primitive nonmotorized recreation.

Response #R045

The Plan and EIS provide protection for those roadless areas allocated to semi-primitive nonmotorized recreation through the Standard and Guideline 9. The Standard and Guideline allows for low standard roading and timber harvesting that is compatible with the ROS recreation experience guidelines. Typically this allows for salvage after a major fire or bug infestation when it is considered a detriment to the

recreation experience or represents an unacceptable fire risk to the public. The harvest is unscheduled for semi-primitive nonmotorized areas which means no timber targets are attached to semi-primitive nonmotorized areas.

Topic #R046

In accordance with 36 CFR 21912(b) the Forest Service must identify and evaluate public issues and management concerns. The following issues of major public concern were not given adequate consideration in the Plan: protection of Mount Lola area, roadless areas, and management and maintenance of visual quality.

Response #R046

The Mount Lola area was identified as an issue and concern in the TNF planning process as part of the Castle Peak Roadless Area and as a downhill skiing question. In the Plan, the Mount Lola area is a specific Management Area and consideration was given to how the area should be managed. During review of the public response to the Draft DEIS and Plan, the Mount Lola area was identified as a critical issue and given additional consideration.

Roadless area management was identified as one of the nine major issues to be addressed in the planning process. See Appendix A (EIS) for specific information on how it was treated as an issue. Roadless Areas were also identified as a critical issue and given additional consideration during the review of public response to the Draft EIS and Forest Plan. In the DEIS the Roadless Areas are allocated to a range of uses from semi-primitive nonmotorized ROS class to timber management. By providing a range of allocations by alternatives, full consideration was given to possible environmental effects and outputs. See Appendix G (EIS) for a display of this information.

Visual quality and what levels to maintain were identified as an issue as part of the major issue, recreation. See Appendix A for specific detail. Visual quality was also identified as a critical issue and given additional consideration during the review of public response to the Draft Forest Plan and EIS. Based on this additional consideration Visual Quality Objectives direction was increased in several management areas. See the responses under Visual Resources Management for more detail.

Topic #R047

The Castle Peak area should be designated for semi-primitive nonmotorized recreation, wildlife,

and watershed without provisions for timber cutting, road construction, off-road vehicle use, or hydroelectric development.

Response #R047

The management emphasis of this area will be to manage for dispersed recreational values. Timber management activities will be limited to special cutting only. Land acquisition, particularly in the north end of management areas, will be emphasized to protect the wildlife and dispersed recreation values.

Summer use of OHV's will be limited to designated routes only. Over the snow OHV use will be limited to designated routes in the Round Valley area and will be prohibited in the Castle Valley area. By limiting vehicles to designated routes, a semi-primitive recreational experience can be provided for hikers, equestrian, and off-track Nordic skiers in the areas where trails are not designated for vehicular use.

There are no water impoundment projects proposed for this area. No commercial recreation development is planned for this management area.

Topic #R048

Grouse Lakes area should be managed as semi-primitive nonmotorized experience and expanded to include Fordyce Creek and English Mountain areas. Proposed management is not tight enough to protect the values. New water impoundment projects should not be permitted.

Response #R048

The Forest agrees that the Grouse Lakes area should continue to be managed for semi-primitive nonmotorized recreation because of the high scenic and recreational values. National Forestlands will be managed in this way and the Forest will continue to work with private land owners to achieve this end. There are no proposed water impoundment projects within this area.

Fordyce Creek will remain semi-primitive motorized which will allow for some motorized use but the recreation experience will remain semi-primitive. The English Mountain area will remain roaded natural for ROS class and be managed for partial retention visual quality objectives as viewed from The Grouse Lakes area and Bowman Lake area.

Topic #R050

East and West Yuba areas are nearly roadless and should be preserved for wildlife, water quality, native

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trout, and recreation or as Wilderness. Campgrounds should not be constructed and OHV's should not be permitted in the Sunnyside area. Empire Creek should be included in this Management Area The proposed arterial through this management area is detrimental to the semi-primitive motorized recreation experience proposed for the area.

Response #R050

The Forest recognizes the unique values of the northern portion of this area. Consequently, boundaries have been changed so that the Sunnyside area will include more of the area with high recreation demand.

This area will have an emphasis of retaining the natural landscape and providing dispersed recreation opportunities in lieu of timber management. Summer OHV use will be restricted to designated routes to prevent environmental damage and provide some solitude for nonmotorized users. Empire Creek is not included in this management area.

There are no plans to develop a major campground in the Sunnyside area.

The Forest recognizes that the proposed arterial will effect the semi-primitive motorized recreation to some degree. In recognition of this effect a zone of roaded natural ROS class has been identified along this proposed road in the FEIS. The resource values south of the Sunnyside area are significant enough to justify building the proposed arterial.

The above areas were released for multiple-use management under the California Wilderness Act See also Response #R014.

Topic #R051

Duncan Canyon, particularly Little Robinson Valley, should be managed for its roadless character.

Response #R051

Little Robinson Valley will be managed to emphasize scenic qualities and will be managed for semi-primitive nonmotorized The visual quality objective for the trail between Robinson Flat and Little Robinson Valley will be retention in foreground. A partial retention visual quality objective in foreground will be maintained in the area south of Little Robinson Valley and above the Duncan Creek Trail The emphasis in most of the remaining area will be intensive even-aged timber management, with a Roaded Natural ROS and Modification visual quality objective.

Topic #R052

The Mt. Lola/Independence Lake area should be managed for semi-primitive nonmotorized character and not be roaded.

Response #R052

This area will not be managed for a semi-primitive nonmotorized area. The management emphasis of this area will be to maintain the recreational attributes. Vehicular use will be permitted on designated routes only during the Summer months.

Timber management will be on a long rotation through selective and small group harvest rather than intensive short rotation even-aged management Relatively high visual quality will be maintained through a partial retention visual quality objective

A winter sports and recreation complex could be allowed for development in this area if and when a proposal is made and it is determined through an EIS process that the merits of the project outweigh the associated impacts

South of this area the Castle Peak area is managed for semi-primitive motorized ROS class.

Topic #R053

Logging and road building will impact the dispersed recreation values of the Lafayette Ridge and Middle Yuba areas.

Response #R053

The emphasis in the inner gorge of the Middle Yuba River canyon will be dispersed recreation (ROS class- semi-primitive motorized for most of the River) and protecting water quality and fisheries. This steep canyon will remain largely inaccessible by vehicles and summer vehicle use will be restricted to designated routes

The emphasis around Lafayette Ridge will be timber management. Recreation will not be an emphasis in this area Recreation activities not requiring a natural appearing environment may benefit from improved road access, however, opportunities for recreation requiring a natural-appearing area will be reduced.

Topic #R054

The North Fork of the Middle Fork of the American River (NFMFAR) should be managed for the semi-primitive nonmotorized character,

Response #R054

Management of the inner gorge of the NFMFAR, essentially the RARE II area, has been clarified in the Final Plan. The ROS for this area will be semi-primitive nonmotorized with a visual quality objective of Partial Retention.

Topic #R055

Manage the Bald Mountain area for semi-primitive nonmotorized character without grazing use.

Response #R055

The Bald Mountain area will not be managed for Semi-primitive nonmotorized character. The area will be open to OHV vehicles except where it interferes with winter deer range and watershed research projects

The Babbitt Research Natural Area portion of Bald Mountain will be managed for Semi-primitive nonmotorized character.

Grazing will continue on the 3 allotments in the Smithneck Management Area. Visual quality will be emphasized along the Babbitt Peak Trail and timber will be harvested on a long rotation.

Topic #R056

Emphasize semi-primitive nonmotorized recreation on the Middle Yuba River.

Response #R056

Semi-primitive nonmotorized recreation has been carefully considered in various alternatives in the DEIS/FEIS. Approximately 18 miles of the Middle Yuba River is being designated a semi-primitive motorized ROS class an average of 1/4 to 1/2 mile on each side of the river. Refer to the ROS class element map. While semi-primitive motorized designation allows for motorized use much of the area will remain similar in character to semi-primitive nonmotorized areas due to the rugged terrain and steep slopes.

Topic #R057

Respondents oppose logging in roadless areas.

Response #R057

All areas have been evaluated in a range of alternatives in the DEIS/FEIS and final management direction set for all Forest areas including roadless areas. In the Final Plan, East and West Yuba roadless areas, and Duncan Canyon roadless area are

recommended for timber management Bald Mountain is recommended for timber management and a Research Natural Area. The North Fork American River roadless area is recommended for timber management on the upper slopes and the rest is set for semi-primitive nonmotorized designation. The rest of the roadless areas are designated for semi-primitive motorized or nonmotorized. The Forest believes this is the best balance between commodity outputs and semi-primitive recreation values.

Topic #R058

The DEIS did not consider irreplaceable loss of roadless areas due to road construction.

Response #R058

The DEIS did not discuss the concern of irreplaceable loss of roadless areas due to road construction. In the FEIS there is a discussion of this concern in Chapter 4 under the section on Irreversible or Irrecoverable Commitment of Resources.

Topic #R059

I oppose mining in roadless areas.

Response #R059

Mining is a legitimate use of National Forest lands and is allowed in roadless areas based on existing mining laws. Mining activities are administered under special use permits and activities necessary to operate a legitimate mine are authorized as long as the activities are commensurate with the resource to be extracted.

Topic #R060

There is a need for preservation of National Forest lands in a natural state for a variety of reasons:

- (a) so that future generations can visit and enjoy these areas,
- (b) it is satisfying to know that areas have been set aside for nature rather than to be exploited for economic reasons,
- (c) there is enough developed area and the undeveloped areas must be preserved in their natural state,
- (d) preservation of natural areas is essential for certain plant and wildlife species and to ensure diversity,
- (e) preservation of lands provides for spiritual needs of mankind, a refuge from man's influence,

Recreation (Wilderness/Roadless Areas)

(f) preservation of lands in their natural state provides recreational opportunities not found elsewhere.

Response #R060

The Forest recognizes that preservation of lands in their natural state is important for a variety of reasons and that these lands provide values not available anywhere else. The TNF presently has Granite Chief Wilderness and the North Fork of the American River Wild and Scenic River segment for preservation in their natural state. Many other areas are to be managed as semi-primitive where natural processes are allowed to occur with little or no influence by man. Although the Plan provides for some preservation, the mission of the Forest Service is to provide for multiple use. Preservation of all of the undeveloped areas would preclude meeting other multiple use objectives

Topic #R061

Protect instead of exploit these areas: Marysville Road, Grantville and Bowman areas, Moonshine road, Alleghany, Highway 49, Stud horse Creek, Royal Gorge, Hawley Lake, Truckee River, Huysink Lake, Fordyce Lake, Logan Canyon, Lavezzola Creek, Little Granite Creek, Mt. Lola, Sierra Buttes, Alpine Meadows, Robinson Flat, high elevation areas, Lafayette Ridge, Long Point, Ralph Ridge, Sage Hen, Independence Lake, Cedars, Cisco Grove, Sunnyside, Sunflower compartment, Red Star Ridge, Sugar Pine, Footes crossing and Pliocene Ridge Road.

Response #R061

All of the above areas have been considered in one way or another in regards to how they should be best managed. All of these areas have received a visual quality objective, an ROS class designation, a level of OHV use and also, many Forest Standards and Guidelines apply to each area mentioned. The best place to see how an area will be managed is in the management area direction in the Forest Plan for each management area. While you may or may not agree with the management emphasis for each of the areas listed, the TNF has developed a set of Standards and Guidelines to protect the basic Forest resources such as soil, water, and riparian vegetation.

Topic #R062

The FEIS must include concise discussion regarding the importance of the roadless areas (in gener-

al) in the maintenance of the forest ecosystem based on current conservation biology data.

Response #R062

The FEIS does not specifically discuss the importance of roadless areas in the maintenance of forest ecosystems. The issue is addressed, however, under chapter 4 environmental consequences for both wildlife and vegetative diversity. The number of roadless areas managed for SPNM or other mixes of multiple use activities was definitely one of the factors that affected the resulting environmental effects.

Topic #R063

As quoted above, FMP (IV.19) notes that 'SPNM recreation opportunities will be reduced. By the fourth decade demand will exceed supply.' This observation contrasts with DEIS (4.52) '...dispersed recreation is sufficient' to accommodate a doubling of Forest RVD by 2030.

Response #R063

Both statements are correct. While SPNM recreation demand will exceed supply by the fourth decade, overall dispersed recreation could still accommodate a doubling of use. This issue is best clarified by reading the section under Recreation Opportunity Spectrum about two pages after the discussion of Dispersed Recreation in chapter 4. Under the Recreation Opportunity Spectrum discussion it becomes clear that there is an abundant supply of land for roaded recreation activities but a shortage for semi-primitive non-motorized and semi-primitive motorized recreation opportunities.

Topic # R064

I request that efforts be increased to acquire privately held lands within sensitive portions of the forest, such as the roadless areas.

Response #R064

The Forest is presently pursuing and will continue to pursue opportunities for land acquisition in important recreation areas that are often roadless. Granite Chief Wilderness, Grouse Lakes, Castle Peak and North Fork American River are some of the areas the Forest is actively pursuing.

Topic #R065

I believe in utilizing all our forest products. Uneven management of timber in wilderness areas makes sense to me. I feel dead and dying timber in the

wilderness can be effectively logged with no damage to the natural aesthetics of the forest

Response **#R065**

It is against Forest Service policy and the Wilderness Act to manage wilderness for timber production. The

Forest will manage Granite Chief Wilderness for natural ecological processes and wilderness values including primitive recreation.

WINTER RECREATION

Topic #R070

The Mount Lola/Independence Lake Area should not be developed as a year round recreation and ski resort area for the following reasons:

- A. The traditional **social/economic** structure and lifestyle of Eastern Sierra County would be severely altered or destroyed.
- B. There would be unmitigatable traffic impacts on Highway 89, Interstate 80, and within the community of Truckee.
- C. There would be impacts to on-site recreation experiences, e.g. hiking, off-track Nordic skiing, hunting, and wildlife or wildflower viewing.
- D. There would be impacts to threatened and endangered or other sensitive species including Lahonton cutthroat trout, willow fly catcher, osprey, and bald or golden eagles.
- E. There would be impacts to key deer fawning habitat and to other wildlife species.
- F. There would be impacts to a variety of high elevation plant species and to specific mountain hemlock stands.
- G. There would be additional requirements for public services such as law enforcement and public health that would not be offset by new revenues.
- H. There would be dramatic needs for new infrastructure developments such as water, sewer, garbage, electricity, and transportation systems. These developments would have secondary impacts.
- I. There would be a consumption of water that is needed for off-site growth.
- J. The proposal would be uneconomical when on-site development, infrastructure development, planning, mitigation, finance, and operating cost are compared with gross revenue projections.

Response #R070

We acknowledge that a major year round development in the Mount Lola/Independence Lake area would represent significant changes in the social structure of Eastern Sierra County and a large number of social and environmental factors must be considered when a *project* plan is analyzed in compliance with NEPA. If social and environmental impacts cannot be adequately mitigated, the proposal will not be approved.

Forest Practice A-12, 'Downhill Skiing Planning, EIS/EA Development' has been added to Management Area 33, Lola. Future decisions will be based on disclosures made through the **environmental process** conducted in compliance with NEPA. If the social, biological, and physical impacts can not be adequately mitigated, the proposal will not be approved. In the case of this area, a *joint* lead agency analysis with local *county(s)* would be appropriate.

The Forest Service will retain ownership in target development parcels to assure that an analysis of various potential proposals is complete.

Topic #R071

The Mount Lola/Independence Lake area should be developed as a year round resort to meet the projected demand for quality downhill experiences and to help bolster the economy of Sierra County.

Response #R071

The Forest Plan allocates land for the possibility of a future year-round **downhill** skiing development in the the Mount Lola/Independence Lake area if a proponent comes *forward* with a proposed *project*. This proposal will receive environmental analysis in accordance with *NEPA*, including mitigation of effects, and coordination with *adjacent* private lands. Also see the discussion in topic immediately above.

Topic #R072

The Coldstream area in MA 71, Tinkers, should not be developed as a new downhill ski resort for the following reasons:

- A. Development of a new resort would result in unmitigatable traffic impacts within the community of Truckee and on Interstate 80.
- B. Development would cause dramatic growth within the community of Truckee that will have secondary impacts.
- C. Most of the growth impacts would be in Nevada County while the major developments and new tax base would be in Placer County.
- D. There would be impacts to on-site recreation experiences, e.g. **hiking**, and off-track Nordic skiing.
- E. There would be increased exposure of trespass onto adjacent undeveloped private properties.

- F. There would be on-site impacts to water quality, deer habitat, and other wildlife species.

Response #R072

A public announcement that a change in ownership and ownership goals to prevent development of the proposed *Sunstone Project* probably account for the small number of comments made on this topic. We acknowledge that a major resort development in Coldstream Canyon could represent significant changes in the growth pattern of Eastern Nevada County and that there are a large number of factors to consider as project plans are developed and analyzed.

See Forest Practice **A-12**, which has been listed for Management Area **71**, Tinkers.

The potential exists for the upper canyon to be developed through an expansion of Sugar Bowl Ski Resort, rather than a new resort being developed. If such a proposal were made it would be treated as presented above.

Topic #R073

Downhill ski expansion should not be allowed in Management Area **86**, Scott, for the following reasons:

- A. There would be severe traffic impacts on Alpine Meadows Road, Highway **89**, Interstate **80**, and within the communities of North Lake Tahoe.
- B. There would be impacts to on-site recreation experiences, e.g. both on and off trail hiking and off-track Nordic skiing.
- C. There would be on-site impacts to wildlife and sensitive high elevation vegetative cover.
- D. Additional ski run cutting along the north facing slope may cause increased threat of avalanche or mud slide danger.
- E. There would be additional requirements for public services such as law enforcement, traffic control, and fire protection.
- F. There would be needs for new infrastructure developments such as water, sewer, garbage, electricity, and transportation systems
- G. Additional ski related growth will cause either direct or indirect changes in the socio-economic structure and lifestyle of the established neighboring communities.

Response #R073

We acknowledge that major downhill ski development *expansions* in this area could present significant impacts to traffic patterns and other downhill ski related problem areas. There are a large number of factors to consider as project plans are developed and analyzed. See Forest Practice **A-12**, Downhill Skiing Planning, *EIS/EA* Development which has been listed for Management Area **086**, Scott.

Topic #R074

The unused Deer Park ski runs should be either put to their intended use or be replanted with conifers.

Response #R074

The forest Service agrees and is encouraging the special-use-permit holder to submit a master plan amendment for the Deer Park site. Periodic on-site inspections have indicated that soil resources are stable and that conifer seedlings and advanced regeneration stock are becoming well established on most of the disturbed sites,

Topic #R075

Additional rafter parking should not be allowed at the Deer Park downhill ski facility for the following reasons:

1. Traffic congestion on Alpine Meadows Road and at the Alpine Meadow Road/ Highway **89** intersection.
2. Litter and pollution problems
3. Disruption of peace and quiet.

Others believe that rafter parking should be allowed at the Deer Park downhill ~~ski~~ facility.

Response #R075

We will continue to allow commercial parking at this facility until alternative remote parking opportunities can be established. Of *primary* concern is the need to seek solutions to the vehicle impacts to Lake Tahoe.

Parking will be confined to the Deer Park Facility and will not be authorized on adjacent National Forest System parcels.

Topic #R076

The ski and electronic facilities on Squaw and Ward peaks are ugly, dirty, and cluttered. I cannot agree that this has no effect on the integrity of Granite Chief Wilderness.

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Response #R076

The ski and electronic facilities on Squaw and Ward peaks are not within Granite Chief Wilderness and therefore do not have a direct effect on the integrity of Granite Chief Wilderness. Indirectly there are some visual effects in the wilderness where these facilities can be seen. It is Forest Service policy to see that such facilities use whatever measures possible to reduce their visual impact as much as possible.

Topic #R077

Along Highway 89 in Management Area 70 and Management Area 71, the winter recreation should be expanded.

Response #R077

Along highway 89 we are looking at providing more winter recreation opportunities such as winter camping at existing campgrounds. For downhill skiing expansion refer to other topics that address this issue.

Topic #R078

Some respondents felt that the Lower Shirley Canyon portion of Management Area 71, Tinkers, (NFS portion of Sec. 30, T. 16N., R. 16E.) should not be developed for downhill skiing because such development will destroy the on-site amenity values of this scenic canyon.

Other respondents felt that the development of Lower Shirley Canyon is compatible with the destination resort goal adopted under the Squaw Valley General Plan Amendment.

Response #R078

The Forest Service position is that lower Shirley Canyon has unique amenity values and that extensive tree removal and any slope grading necessary to develop ski lifts and a ski return would assuredly degrade those amenity values.

The Management Emphasis for Management Area 71, Tinkers, has been changed to include the following statement:

'Emphasize non-commercial use of Lower Shirley Canyon restricting downhill ski developments to those activities that are compatible with protection of the inherent amenity values. Incidental tree cutting to allow skiing between adjacent trees may be considered compatible following detailed on-site environmental analyses conducted in compliance with

NEPA. Slope grading will not be considered compatible:

A semi-primitive nonmotorized recreation opportunity spectrum theme is being adopted for this portion of Management Area 71.

Forest Practice A-12, 'Downhill Skiing Planning, EIS/EA Development' has been listed for Management Area 71, Tinkers. Future decisions regarding tree cutting to allow skiing between adjacent trees will be based on disclosures made through the environmental analysis process relevant to that practice.

Topic #R079

Some respondents felt that the Upper Shirley Canyon portion of Management Area 71, Tinkers, (NFS portions of Sections 24 and 26, T. 16N., R. 15E.) should not be developed for the following reasons:

- A. There would be increased exposure of trespass onto adjacent undeveloped private properties.
- B. Development would have an impact on on-site recreation experiences, e.g., hiking, and off-track Nordic skiing.
- C. Development would have an impact on watershed stability and on-site wildlife.

Other respondents felt that Upper Shirley Canyon development is highly compatible with existing developments on adjacent private properties.

Response #R079

Downhill ski expansion in this area will be less impacting than development of new resort areas or into areas with high on-site amenity values such as lower Shirley Canyon.

Emphasis will be placed on evaluating downhill ski expansion proposals for this portion of Management Area 71, Tinkers. Forest Practice A12, 'Downhill Skiing Planning, EIS/EA Development' has been listed for Management Area 71. Future decisions will be based on disclosures made through the environmental analysis process. Consideration will be made of the merits of a joint lead agency analysis with local county governments.

Topic #R080

New downhill ski developments should not be allowed on the Tahoe National Forest.

Response #R080

Tahoe National Forest along with many other National Forests has some of the best potential downhill skiing sites in the State. Downhill skiing requires a combination of suitable slopes, adequate snow supplies and reasonable access. Where these conditions exist we are willing to consider allowing downhill skiing as stated in the FEIS and Plan. Future decisions made on downhill skiing will be based on disclosures made through the environmental analysis process. If the social, biological, and physical impacts can not be adequately mitigated, the proposal will not be approved.

Topic #R081

The FEIS must disclose the full environmental impacts associated with downhill ski development.

Response #R081

The broad level impacts associated with downhill skiing are disclosed in the DEIS and FEIS. Downhill skiing along with all other management activities and their associated effects are discussed under Chapter 4. Skiing may not be specifically mentioned but the impact of all management activities are considered for the effects on each alternative. The effects are discussed under the various resources affected such as water, soils, visual, and etc. and not under downhill skiing. Future decisions will be based on disclosures made through the NEPA environmental analysis process. If the social, biological, and physical impacts can not be adequately mitigated, the proposal will not be approved.

Topic #R082

A master plan of downhill ski developments on the Tahoe and Eldorado National Forests and the Lake Tahoe Basin Management Unit should be prepared to address the cumulative effects of development.

Response #R082

We agree that developments on adjacent National Forest and on private properties outside of the National Forest are interrelated. Demand projections are measured against both on and off-forest supply opportunities. Cumulative effect analysis is compatible with Forest Practice A-12 "Downhill Skiing Planning, EIS/EA Development" which has been included in all potential downhill ski development management areas.

Topic #R083

Development of new downhill ski resorts is necessary to supply quality downhill ski experiences and to protect the quality of downhill ski experiences on existing developed sites.

Response #R083

We agree. Expansion of existing resorts, although given priority over development of new areas, will not satisfy projected demand. To meet projected demand over time it will be necessary to develop completely new ski areas as well.

Topic #R084

Downhill ski expansions should be limited to private properties.

Response #R084

The geographic lay-of-the-land often causes expansions on private land to directly interrelate with use of adjacent National Forest Parcels. These developments are best analyzed through Joint Lead Agency agreements with the involved county government. Such agreements are compatible with Forest Practice A-12 "Downhill Skiing Planning, EIS/EA Development".

Topic #R085

Helicopter Skiing should not be allowed in the Lyon/Needle Peak area.

Response #R085

Helicopter Skiing is not compatible with the establishment of the proposed Mountain Hemlock Research Natural Area (RNA). Following project level analysis, we have determined that helicopter skiing is not economically feasible on the Forest at this time. We will not encourage helicopter ski proposals. Should they materialize, they will be evaluated, on a case-by-case basis, through a project level environmental analysis conducted in compliance with NEPA.

Topic #R086

Existing ski areas should be fully developed before new areas are developed.

Response #R086

We give priority to developing existing ski area capacity before new areas are developed. The existing ski area future expansion capacity will not be enough.

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to meet future downhillski demand. If new areas are proposed the Forest will look at these proposals in regards to how it helps meet future downhill skiing demand.

Topic #R087

The Plan should state that CEQA and NEPA EIR impact reports will be done prior to winter sports development.

Response #R087

The Plan does state this under Forest Practice A-12, "Downhill Skiing Planning, EIS/EA Development".

Topic #R088

It appears contradictory that the Wildlife Alternative results in a 1000% increase in downhill skiing.

Response #R088

The DEIS showed in Alternative D that downhill skiing could increase from 210 million recreation visitor days to 830 million visitor days in the fifth decade (not 1000% increase). This is an appropriate estimate since Alternative D was designed to promote harvest species such as deer. Deer do benefit from developments such as ski runs. Early successional vegetation that results from harvesting trees for a ski run provides a needed food source. Corridors between the runs provide needed cover. In addition irrigation on the runs also offers additional benefits for deer.

Topic #R089

Emphasizing mass transit should be given more than peripheral consideration in meeting downhill skiing demand at existing facilities.

Response #R089

Mass transit is an issue beyond the jurisdiction of the TNF. We will cooperate with entities that are willing to promote mass transit. In regards to meeting downhill ski demand it could solve short-term demand concerns particularly in regards to base facility capacity but it will not address long-term capacity on the slopes.

Topic #R090

Large areas of the Forest should be set-aside for off-track Nordic skiing.

Response #R090

The following areas are to be managed emphasizing off-track Nordic skiing.

- Management Area 80, (Granite Chief)
- Management Area 58, (Steep Hollow)
- The Pole, Deep, and Silver Creek portions of Management Area 70, (Pole), and -Management area 71, (Tinkers)
- Management Area 41 (Grouse)
- Castle Valley portion of Management Area 44, (Castle)
- Management Area 31, (Kyburz)
- Management Area 75, (Onion)
- Management Area 43, (Sagehen Station)
- Management Area 60, (Summit)

Additionally, emphasis on this activity is being made at various locations along Highway 20, Old Highway 40 (Big Bend), Highway 49 (North of Yuba Pass), and Highway 89 (Sagehen Summit, Cottonwood, and Penny Pines)

Physical space is not the overriding problem. A lack of parking opportunities is the limiting factor. We intend to work closely with a variety of potential partners to solve this parking problem.

Topic #R091

Set-aside Steep hollow for off-track Nordic skiing.

Response #R091

We agree and will continue to provide marked cross-country (off-track) ski trails.

Topic #R092

Set-aside Management Area 55, (Summit), Management Area 71 (Tinkers), and Management Area 86 (Scott) for off-track cross-country skiing.

Response #R092

Management Area 55 and Management Area 86 have good off-track cross country ski potentials. They currently are and will remain available to over-snow vehicle use. However, few snowmobiles enter these Management Areas as there are few access opportunities.

The Deep, Pole, and Silver Creek portions of Management Area 71 are and will remain managed with emphasis on off-track cross-country skiing. The remaining portion, accessible from Cabin Creek, will remain available to over-snow vehicle use.

These same Management Areas have several existing ski areas and potential ski areas. To the extent that off-track cross-country skiing does not conflict with downhill skiing the cross-country skiing will be emphasized

Topic #R093

Set aside Kyburz Flat and Yuba Pass North for off-track cross-country skiing.

Response #R093

Both Kyburz Flat and Yuba Pass North are available for off-track cross-country skiing and over the snow vehicles. In Management Area 008 the Forest Plan is committed to separating Nordic ski trails from snowmobile trails.

Topic #R094

Set aside Sardine Valley and Davies Canyon for off-track cross-country skiing.

Response #R094

Sardine Valley, Davies Canyon areas are in Management Area 021, (Sardine-Worn) which will be managed for both off-track cross-country skiing and over-snow vehicle use (over snow open).

Topic #R095

Set aside Bickford Meadow for off-track cross country skiing.

Response #R095

Most of this meadow is in private ownership. The adjacent National Forest System lands will be managed for both off-track cross-country skiing and over-the-snow vehicle use (over-snow open).

Topic #R096

The Forest Service should provide more parking to accommodate the needs of off-track cross-country skiers.

Response #R096

We will continue to work with state and local agencies and private interest groups to develop winter sports parking areas. The Forest has a completed study (Ted Gregg, 1979) to guide the development and prioritization of those developments.

Topic #R097

The off-track cross-country skiing potential of the Mount Lola area should be emphasized including the development of a hut system.

Response #R097

The land ownership pattern on the forest shows great promise for the development of a hut system to enhance long distance off-track Nordic skiing. Our general policy is that the huts themselves should be developed on private properties. Trails between huts that cross National forest parcels should be available to the general public and not just the clients of the hut provider.

Also see the response to development of Mount Lola for downhill skiing.

Topic #R098

The Forest should protect the foreground views as seen from the Sawtooth road because of the large volume of off-track cross-country skiers and Great Race participants that use this road. Logging should be prohibited.

Response #R098

The Sawtooth road was constructed for and has been managed as a primary timber access road. Timber cutting accomplished in 1986 in the foreground of this road had a small impact on the winter views because stumps and tractor trails were covered by snow. Organizers of the Great Race indicated that the cuttings actually enhanced their opportunities to groom the race course. Management Area 68 (Sawtooth) will continue to be managed with emphasis on both timber production and winter/summer dispersed recreation. A 'Partial Retention' VQO for the foreground and midground of the Sawtooth road has been adopted.

Topic #R099

The Forest should identify specific sites and a financial plan for providing necessary grading and paving sites suitable for inclusion in the California Department of Parks and Recreation Sno-Park program.

Response #R099

The guiding direction for development of Winter Sports staging opportunities was accomplished in 1979, (Gregg, unpublished). Revised Management Area Descriptions, Management Area 19 (Highway

89), and Management Area 41 (Castle), contain specific goals to be addressed while working with the Sno-Park Program representatives. No specific financial planning is envisioned at this time

Topic #R100

Additional Special Use Permit Authorizations for commercial cross-country ski developments in Management Area 60 (Summit), and Management Area 76 (Loch Leven), should be prohibited because they cause a loss of off-track cross-country ski opportunities

Response #R100

The Forest has been aware of this public concern and has sought and received public comment on each proposal to use National Forest parcels for this purpose. The land ownership pattern, and lack of clearly defined rights-of-way across private properties, have caused significant complications to our goal to protect the public's interest to have continued free access to off-track cross-country ski opportunities on adjacent NFS parcels. The commercial cross-country ski developments that have resulted in a loss of off-track cross-country skiing possibilities have been on private property. The private property owners certainly have the right to restrict public use of their lands.

The special-use permit and operating plan for Royal Gorge contains substantial requirements to provide for off-track cross-country ski opportunities and impacts. We will continue to negotiate multiple use purpose rights-of-way to gain access to land-locked NFS parcels. We will continue to seek and evaluate public comment on each project proposal to use National Forest parcels

Topic #R101

Special-use permit authorizations for commercial cross-country ski developments in Management Area 44 (Castle) should be prohibited because of impacts to off-track cross-country ski opportunities.

Response #R101

We acknowledge that commercial cross-country ski development in Management Area 44 can have a notable impact on traditional off-track cross-country ski experiences. We will emphasize planning for noncommercial cross-country ski developments that are targeted for education or training purposes in conjunction with developments on adjacent private properties. We will continue working with State Agencies and the private sector to secure a long

term winter sports parking solution to serve this management area. We will continue to attempt to acquire private lands within this area as they become available to protect both summer and winter dispersed recreation values

Topic #R102

Special-use permit authorizations for commercial cross-country ski developments on the Forest should be denied because of impacts to off-track cross-country ski opportunities

Response #R102

See the previous responses for the Donner Summit/ Castle Valley areas

We have taken the position that the immediate projected demand for commercially provided cross-country skiing can and should be accommodated by development of private properties. Since the initiation of that stance, the Nordic centers at Tahoe Donner, Northstar at Tahoe, and Eagle Mountain have evolved. Others have expanded. Future developments may necessitate authorizations to use adjacent National Forest parcels. We will seek and evaluate public comment on any proposal to use National Forest lands for commercial cross-country ski developments. Future decisions will be based on disclosures made in environmental analyses conducted in compliance with NEPA.

Topic #R103

I believe that free access to backcountry skiing should be provided across the commercial ski areas on all TNF land.

Response #R103

The Forest will maintain free access to backcountry skiing across commercial ski areas on TNF land where possible and practical. This issue will be addressed in the EA/EIS for ski area expansion or development of new ski areas. It is not possible to provide open access just anywhere across commercial ski areas due to safety considerations. Possible safety problems include increased collisions and creating tracks that draw downhill skiers beyond the downhill ski area perimeter into areas where they can not return to the base facilities.

Topic #R104

The Kyburz area from the cottonwood road to Davies Creek to Highway 89 should be designated

for nordic skiing and closed to snowmobile use. There are few areas along highway 89 that a nordic skier can go to get away from the presence of snowmobiles. There are significant acreages west of highway 89 that are being managed for motorized winter use. Any sense of balanced use dictates there be some area with easy access that a skier can go without the disturbance of snowmachines. There is a significant and growing population that wishes to escape snowmobile tracks and noise.

Response #R104

The area East of highway 89 in the *Kyburz* area is designated open to snowmobile use in the Forest Plan Actual use would be very light for snowmobiles due to lack of access and the emphasis on facilities including groomed trails to the west of highway 89 at *Little Truckee Summit*. At this time the amount of nordic ski use east of highway 89 does not seem to warrant a closure for snowmobiles

RESEARCH NATURAL AREAS

Topic #N001

The Forest should increase the number of Research Natural Areas (RNA) for habitat protection for uncommon species. Suggested areas are: Mount Lola, Headwaters of Independence Creek, Sugar Pine Point, Babbitt Peak, Lafayette Ridge, Duncan Peak, Sagehen Basin/Mason Fen, Castle Peak, Headwaters of Sagehen Creek, Grouse Ridge, Perazzo, White Rock, Lion Peak/Needle Peak, Union Creek and Cedars Basin.

Response #N001

To the extent possible, we selected the most suitable of the available, qualified areas for each appropriate target element in our assigned province. The criteria used to evaluate and determine if the TNF proposed an area for RNA designation in the proposed alternative are as follows: The ecological attributes of the area, the theme of the alternative (what emphasis is on other attributes), land ownership, current and proposed land uses, and effects of designation on other resources. See Appendix C of the EIS for further clarification.

Topic #N002

Too much area is set aside for wilderness and research study areas, which reduces the usable timber base.

Response #N002

Research Natural Areas are established to preserve examples of significant natural ecosystems for purposes outlined in Appendix C of the EIS. They serve a unique role in providing baseline standards and knowledge that aid in improving the quality and efficiency of land and resource management. For wilderness designation, please refer to the Roadless/Wilderness Response #R011.

Topic #N003

I am in favor of your designation of Special Interest Area and Research Natural Area areas, however, if logging, roadbuilding and domestic grazing are allowed in these areas, what is the point in having them?

Response #N003

Management activities permitted will be limited to those activities which meet the goals and direction that protect and preserve the natural values for which the RNA is established.

Vegetative management may occur in SIA's to the extent that it is compatible with the SIA purpose and management direction.

Topic #N004

Why was the Lyon Peak/Needle Lake area only recommended for further study in the Draft Forest Plan instead of recommended for RNA status?

Response #N004

The Lyon Peak/Needle Lake area had not been evaluated for RNA candidate status at the time the draft Forest Plan was completed. The evaluation has been completed and this area is being recommended to the Chief of the Forest Service for establishment.

Topic #N005

By designating areas into RNA's and SIA's, these areas would provide some botanically significant lands the needed protection, especially for sensitive plant species.

Response #N005

Yes. RNA and SIA designation provide for specific management direction to protect the natural values of the areas.

Topic #N006

We feel that the Tahoe NF should make a stronger commitment to establishing RNA's already approved by the RNA Advisory Committee and Regional Forester. The Forest should accelerate the Inventory and evaluation of other likely candidates on the Forest.

Response #N006

RNA's previously nominated but for which final evaluation was deferred are included in the group to be evaluated during Forest planning. We also included those areas which were to have been completed but for which the environmental analysis, conducted in compliance with NEPA, and establishment report documents, were not completed. The Regional RNA Committee is conducting a Regional analysis to determine what elements are missing.

Topic #N007

Some summary statements explaining what led to the selection and/or refection of RNA candidates should be made in the Appendix of the DEIS.

Response #N007

We have added a paragraph in Appendix C of the EIS displaying the criteria used to evaluate and determine RNA designation. Refer to Response #N001. A brief narrative and the environmental consequences of each RNA designation is also found in Appendix C

Topic #N008

What target RNA elements have been assigned to the Tahoe?

Response #N008

None. Target accomplishment is done through coordinating needs. The Pacific Southwest Region has developed a target RNA system that identifies more than 55 different botanical elements distributed through 11 physiographic provinces. The Tahoe NF is within the physiographic province 7a along with the Eldorado, Plumas and Stanislaus National Forests and the Lake Tahoe Basin Management Unit. The minimum number of target RNA elements have been assigned to the physiographic province and not the individual Forest. The Regional Forester has assigned a target number of 21 and a minimum of 13 for the Forest Plans for province 7a.

Topic #N009

Proposed RNA sites should receive special treatment under management prescription 5 until a decision is made as to its designation.

Response #N009

Proposed RNA sites will receive management as outlined under management prescription 5 until the designation outcome of that area is determined.

Topic #N010

We request that the Tahoe NF lump together Management Areas (MA's) 75 and 79 into one to establish a better RNA in the headwaters basin of the North Fork of the American River.

Response #N010

The management emphasis is different between MA's 75 and 79. The resource management emphasis for MA 75 is to continue to promote the Pacific Southwest Forest and Range Experimental Station's tasks of studying the interrelationships between water, plants, soils and climate, as related to water quality, yield and flow timing. Also, various land man-

agement activities, i.e., timber harvesting practices, will be researched. RNA designation would not meet the management emphasis in Management Area 75

Topic #N011

The Forest Plan should explicitly recognize the importance of maintaining areas of near-pristine condition in the basin of the North Fork of the American River as an asset of statewide importance contributing to Region 5's RNA objective.

Response #N011

The basin of the North Fork of the American River lies within Management Area 79 (Cedars). The management emphasis for that Management Area is dispersed recreation, including commercial nordic skiing, forestry research, and the protection of water quality and will maintain the near-pristine qualities of the basin.

Topic #N012

The Forest Plan should be modified to facilitate, upon appropriate review, eventual establishment of the Lion Peak/Needle Peak area as a RNA

Response #N012

Refer to Response #N004.

Topic #N013

The sixth paragraph on page V.253 of the Draft Plan should be corrected to show that many of the Region's RNA target elements can be met in this basin such as red fir, lodgepole pine, aquatic types, montane chaparral, *Populus tremuloides*, and a variety of geological types.

Response #N013

It is our task to select those areas that are the most suitable of the available qualified areas for each appropriate target element. This is done in coordination with the other Forests in the Central Northern Sierra Province. If it is determined after an ecological survey that more than one target element can be met by designating this area a RNA, we will proceed accordingly

Topic #N014

RNA's should be a minimum management requirement (MMR) to be in compliance with 35 CFR 251.23 but most especially with 36 CFR 21.9.25.

Response #N014

The RNA issue was fully addressed in the Pacific Southwest Region Guide, EIS and LMP. The Regional Guide states clearly the function of RNA's and outlines the planning direction the Forest must take in terms of meeting Regional guidelines for RNA target systems and Federal Regulations. It is our intent to follow through with the Regional direction as outlined in Appendix C of the planning documents

Topic #N015

Allowing timber harvesting practices, even for research purposes, on the University Reserve of Management Area 79 are prohibited by the terms of the easements with the Chickering family.

Response #N015

The resource management emphasis of forestry research would be applied in Sections 29 and 12 of this Management Area only on National Forest System land and only if it would be decided to include these two sections in the Experimental Forest. This point is displayed in the second paragraph of that section.

Topic #N016

The table on page xiv of the DEIS should have RNA's fully integrated along with other features displayed in this table.

Response #N016

Due to the size of material presented, we chose to display recommended RNA's and SIA's by alternative in their own separate table in Appendix C of the EIS.

Topic #N017

The discussion on Basin Peak and Mount Lola on pages xxii, xxx, etc., of the DEIS and DFP should be deleted because they have been considered and rejected by the RNA Advisory Committee.

Response #N017

Basin Peak and Mount Lola must be included in the analysis to ensure their review and consideration by both the Forest Service and public. Also, see Response #N006

Topic #N018

The absence of RNA's in the list of issues to be addressed by the Forest Plan is not in conformance with the issues identified by the public scoping process for the Final Environmental Impact Statement for the Pacific Southwest Regional Guide.

cess for the Final Environmental Impact Statement for the Pacific Southwest Regional Guide.

Response #N018

See Response #N014.

Topic #N019

If RNA's are among the Region's guidelines, then they should be included in the Forest's guidelines too.

Response #N019

Forestwide direction is included in the Summary of Forestwide Standards and Guidelines in the EIS which is common to all alternatives. For management direction pertaining to the Preferred Alternative, management practice A16 provides the management direction by Management Area

Topic #N020

Item b. under theme 5 of the DEIS does not recognize the distinction between RNA's (FSM 4063) and SIA's (FSM 2360).

Response #N020

We agree RNA's and SIA's are discussed under a separate heading (Special Areas) in the Final Plan

Topic #N021

Even though specific sites are not yet identified, the table on page 2.126 of the DEIS should give some sort of a visual cue which lists the remaining RNA target elements yet to be met and to indicate that they are currently being searched for.

Response #N021

See Response #N008.

Topic #N022

Table 1.1 of the Forest Plan should have RNA's added as a Forestwide management objective. This management objective should be tied to the Region's RNA system of target elements such that the unit of measure would be number of target elements projected

Response #N022

Table I1 of the Forest Plan displays the forestwide management objectives by average "annual" outputs. RNA target elements could not be displayed by annual outputs and was not included in the table. For

additional information of how target elements are assigned, please see Response #N008.

Topic #N023

Site-specific species indicators should be developed for RNAs. For example, Washoe pine should be the site specific indicator species for Babbitt Peak.

Response #N023

RNAs are recommended and/or established because we feel that the area is the most suitable representative area for a specific target element. The purposes for establishing the RNA for a specific target element are to preserve examples of significant natural ecosystems, for research and ecological study, maintaining gene pools, and, where appropriate, protect habitats of rare and endangered species of plants and animals. The purpose for the establishment of a RNA is different in most cases than the purpose for establishing a specific species as a management indicator species (MIS) as outlined in the Federal Regulations.

TOPIC #N024

Standard and Guideline 54 - Coordination With Other Ownership and Objectives - should have RNA's and SIA's added to the list of enumerated programs.

Response #N024

Planning and establishment of RNAs and SIA's is done on National Forestlands only. Therefore, coordinating resource management is not needed.

Topic #N025

Appendix C may be the place to have a detailed discussion outlining the USES policy directives and Regional guidance on RNAs.

Response #N025

The Forest Plan is a separate, but companion document to the Pacific Southwest Region Guide, EIS and

LMP The Regional Guide states clearly the function of RNAs and outlines the planning direction each Forest must take in terms of meeting Regional guidelines for RNA target systems. The Forest Plan states how the intent of the guidelines are fulfilled through the Forest standards and guidelines and practices dealing with RNAs

Topic #N026

Botanical elements are important considerations in RNA management but the second sentence in the RNA paragraph on page C.2 of the Appendix should take a more ecological view and speak in terms of ecosystems.

Response #N026

We agree with your assessment and have corrected this sentence accordingly.

Topic #N027

The opening sentence on National Natural Landmarks (NNL) on page C.2 of the Appendix implies that NNL's must previously be allocated to RNA or SIA status. While this is often true, it is not a requirement.

Response #N027

You are right We have corrected this sentence accordingly

Topic #N028

Item a. on page C 4 of the Appendix is written with a strong negative bias that implies that the area will be off limits to all but the privileged few engaged in research. This is not true.

Response #N028

This section has been reworded Also, see Response #N003.

ROADS/ENGINEERING

Topic #E001

Respondents oppose additional road building because roads cause erosion which adversely impacts water quality.

Response #E001

The Forest acknowledges that road development can have a major impact on erosion and water quality. Management practices and on-the-ground procedures have been developed and are continually improved upon to minimize erosion in roaded areas.

The negative impacts associated with road development are mitigated during project development and are covered by the Forest Standard and Guidelines (S&Gs) and Practices. All projects require an environmental analysis conducted in compliance with NEPA that assesses all impacts for the specific areas affected by the project.

Specifically, S&G 50, Water Quality Protection, requires implementation of the Best Management Practices (BMPs). Twenty-seven BMPs were developed to cover the various impacts of road development on water quality. The Forest Environment Analysis process will include an evaluation of the effectiveness of BMP's on each specific project. S&G 68 addresses the minimum, number, and standard of road necessary while still meeting all resource needs. Forest Practices L8 allows for seasonal road closures as a measure for watershed protection. This concern is also covered by Goal 26.pV3 of the Draft Plan. The Forest monitoring program will evaluate the effectiveness of the BMP's and changes will be made if necessary.

Topic #E002

Respondents oppose additional road building because of the adverse impacts they cause to wildlife.

Response #E002

We recognize the potential for roads to disturb wildlife (DEIS, pg. 3.92). Guideline 68 gives direction to protect fish and wildlife from conflicts arising from use or construction of the Forest's transportation system.

Topic #E003

Respondents believe that roads provide beneficial access for all forest users.

Response #E003

The Forest Planning System was developed as a tool to recognize the need for a multiple-use National Forest and to provide guidance to ensure this objective is met. Part of the Plan objective is to provide an efficient Forest Transportation System. A well developed transportation system is required to provide access for the various Forest Users. An example of providing a comprehensive multiple use transportation system for the dispersed recreation users is discussed in the DEIS, page 4.52 and 4.53.

TOPIC #E004

Respondents are concerned that road closures will restrict access to private land owners or permittees.

Response #E004

There are several miles of roads on the Tahoe NF which are no longer needed due to changes in area management, environmental damage, or high costs for maintenance and will be closed. However, the right to appropriate access to private lands across Forest lands is addressed by existing laws and regulations such that Forest permittees and landowners have appropriate access. All road closures will also be subject to an environmental analysis conducted in compliance with NEPA for each specific area, which will include an assessment of the roads for appropriate access to private lands, before the roads can be closed.

Topic #E005

Respondents believe that road construction costs are too high and are not offset by timber sale revenues.

Response #E005

Forestwide Standards and Guidelines in the Plan (S&G 68) require economic efficiency be considered during project planning and environmental analysis. We continue to look at the new ways to reduce costs by constructing roads to minimal levels that provide safe travel for all road users.

Topic #E006

Respondents are opposed to additional road building

Response #E006

The current situation is that the majority of Transportation System required for multiple use management of the Tahoe NF has already been constructed. The collector/arterial road system is 95% complete and the local road system is 90% complete.

However, additional roads will be built to meet a variety of Land Management objectives. We are striving for a balance that provides for development of the Forest resources, to provide a variety of recreational uses from motorized to non-motorized while minimizing environmental impacts.

Topic #E007

Respondents are opposed to any road building in Castle Peak area.

Response #E007

The management direction for Castle Peak is addressed in the Forest Management Plan. The direction is semi-primitive motorized. The existing road system for this area is adequate and no new roads are planned. Standards and Guidelines 68 require that site specific impacts be addressed during project analysis.

Topic #E008

Respondents are opposed to any road building along the Rubicon River.

Response #E008

The majority of the Rubicon River is located on the Eldorado National Forest. See the Eldorado LMP. The small portion of the Rubicon River that borders Tahoe National Forest is steep granitic, non-commercial land and no road building is planned in the canyon.

Topic #E009

Respondents are opposed to any road building in East/West Yuba roadless areas.

Response #E009

Two management areas incorporate an old RARE II area. The California Wilderness Act of 1984 released this roadless area to other multiple uses. Sunnyside will be managed for semiprimitive motorized recreation and to protect the scenic and remote character of the area. Access will be predominantly on the ridgetops. Lavezolla will be managed for Roaded Natural recreation and intensive timber management. Forestwide Standards and Guidelines requires project level planning analysis to address and/or mitigate resource issues associated with road development for this area. These areas have significant timber resources which are needed to provide a dependable supply of timber products.

Topic #E012

Respondents are opposed to any road building in Middle Yuba Roadless Area.

Response #E012

The Middle Yuba River was identified as a RARE I area but did not meet RARE II criteria. Management direction is to manage the canyon for semiprimitive motorized ROS. The canyon gorge will remain largely unaccessed and will be managed for semiprimitive motorized dispersed recreation and maintenance of a quality fishery.

Topic #E013

Respondents are opposed to any road building in South Fork of Yuba River.

Response #E013

The management direction is to manage for semiprimitive motorized for most the the canyon. Additional motorized access would be limited.

Topic #E015

Respondents are opposed to any road building in Duncan Canyon.

Response #E015

The management area incorporates a previous RARE II area. The California Wilderness Act of 1984 released this roadless area to other multiple uses. Management direction is Semi-primitive Nonmotorized in Duncan Peak, SMZ, and Little Robinson Valley, and Roaded Natural in the remainder of the management area.

Topic #E016

Respondents are opposed to any road building in high elevation and the East side of Tahoe National Forest.

Response #E016

The Tahoe NF believes the roaded timber lands on the East Side of the Forest can be managed in a manner that will not only improve timber resources but will accommodate many uses with acceptable environmental impacts. Forestwide Standards and Guidelines 68 require that site specific impacts be addressed during project analysis.

Topic #E017

Respondents are opposed to any road building in Grouse Lakes roadless area.

Response #E017

The management area incorporates an old RARE II area. While the California Wilderness Act of 1984 released this roadless area to other multiple uses, management area direction is to emphasize nonmotorized, dispersed recreation. However, motorized access is permitted for administrative and emergency access and to private lands.

Topic #E018

Respondents are opposed to any road building in steep canyons

Response #E018

All road construction must be in compliance with Forestwide Standards and Guidelines. All road construction will be preceded by a site specific analysis to assure that construction can be accomplished within acceptable environmental standards.

Topic #E019

Respondents are opposed to any road building in North Fork American River Canyon.

Response #E019

The North Fork of the American River is included and addressed in these management areas. Management area, North Fork, encompasses the National

Forest portion of the Wild and Scenic River where road development is prohibited by law. In response to public concern, a new management area, American, was developed which extends about halfway to the canyon rim. Management direction is for semi-primitive nonmotorized. Humbug Sailor MA is roaded Natural and will be managed for intensive even aged timber management

Topic #E020

Respondents are opposed to any road building in Bald Mountain roadless area.

Response #E020

The Babbitt Management Area incorporates an old RARE II area. The California Wilderness Act of 1984 released this roadless area to other multiple uses. The area is designated as a Research Natural Area. Management emphasis is for semi-primitive nonmotorized.

Topic #E021

Respondents are opposed to any road building in Middle Fork of American River Canyon.

Response #E021

The management direction for this area is displayed in three management areas. Management Areas, End of the World and Little Oak provide direction for Roaded Natural. Management Area Queens provides for Semi-Primitive Motorized. Fifty percent of these management areas are already accessed by existing roads. Standard and Guidelines requires individual project analysis before any construction is initiated.

Topic #E022

Respondents are opposed to any road building in North Fork of Middle Fork of American River Canyon.

Response #E022

Three management areas incorporate a previous RARE II area. The California Wilderness Act of 1984 released this area to other multiple use. Management Area direction (MA Eldorado, MA Mosquito, and MA Peavine) provided for Roaded Natural and semi-primitive motorized

Topic #E023

Respondents are opposed to any road building in Lafayette Ridge area.

Response #E023

Lafayette Ridge is located in Management Area Cornish. Management direction is Roaded Natural. The area is 75% accessed by the existing road system. Standards and Guidelines require that site specific impacts be addressed during project analysis

Topic #E028

Respondents believe there is a need to minimize the adverse economic and environmental impacts of current traffic flows on the Webber Lake Road on Perazzo Meadows.

Response #E028

The road through Perazzo Meadows is a Sierra County road, therefore, the Forest Service has no jurisdiction.

Topic #E030

Respondents opposed to any road building in roadless areas.

Response #E030

The California Wilderness Act of 1984 released RARE II areas to other multiple uses. MA direction and topics R36-R38 discuss this issue in more detail.

Topic #E031

Respondents oppose road building in the unroaded areas above 6500'.

Response #E031

Forestwide Standards and Guidelines 68 require that site specific impacts be addressed during project analysis. Also see topic E030.

Topic #E033

Respondents oppose road building in the unroaded Canyon Creek area.

Response #E033

The Canyon encompasses the Canyon Creek drainage. Management direction is for Roaded Natural. Forest Standards and Guidelines require that site specific impacts be addressed during project analysis

Topic #E034

Respondents oppose road building in the unroaded Special Interest Areas

Response #E034

Special Interest Areas are established to protect and where appropriate, foster public use, study, and enjoyment of areas with scientific, scenic, historical, geological, or other special characteristics. Roads, trails, or interpretive facilities may be built depending on the area. Refer to Appendix C (EIS) regarding the description and objectives for each SIA

Topic #E043

Respondents are opposed to road building in the Royal Gorge area.

Response #E043

The Royal Gorge is located in four management areas, North Fork, American, Loch Leven and Wabena - Steamboat). Management direction for all areas is semi-primitive, nonmotorized, for the inner gorge of the North Fork of the American, which includes the Royal Gorge.

Topic #E050

Respondents oppose road building in the unroaded Lola, Independence management areas.

Response #E050

Management direction for the Mt. Lola independence area is displayed in Management Area Lola. Direction provides for Roaded Natural with Rural around any future ski base facilities. Standards and Guidelines require that site specific impacts, including road development, be addressed during project analysis

Topic #E053

Respondents oppose road building in the unroaded Granite Chief Wilderness.

Response #E053

We are not building roads in the Granite Chief Wilderness. The Wilderness Act of 1964 prohibits the Forest Service from building roads in a wilderness. However, there are private lands within the Wilderness boundaries which are bound by different legal requirements. The Forest Service is also trying to acquire the private land holdings within the current wilderness area boundary

Topic #E055

Respondents believe that human-caused fires increase because of road access.

Response #E055

While increased access may increase the incidents of human-caused fire, the Forest must be managed for the varying needs of its users. Roads do provide access and quicker response time to suppress fire. Also, roads provide a holding point for fighting wild fires and minimize the spreading of fires.

Topic #E056

Respondent opposes log-truck haul through subdivisions.

Response #E056

As rural areas continue to develop into urban communities this issue becomes more and more important. Forestwide Standards and Guidelines require the Forest Service to coordinate with local agencies in addressing safety issues and traffic impacts when haul through subdivisions is necessary.

Topic #E057

Respondents believe road network should be managed to reduce conflicts with allotments (Range).

Response #E057

The Forest must be managed to provide opportunities for a variety of users. However, Forest Standards and Guidelines do require user conflict to be evaluated and addressed on a case by case basis.

Topic #E058

Respondent wants the Forest Service to coordinate with Sierra County on closing roads during log haul.

Response #E058

Closing roads during log haul is not possible in most cases because the Forest must provide access to private lands, mining claims, and for other user needs. Forest Standards and Guidelines do require coordination with local road agencies, such as Sierra County, to provide safe travel on roads that must remain open during log hauling operations.

Topic #E059

Is the calculation of average road density (bottom of pg. III.34 Draft Plan) based on total acreage or only on roaded acreage?

Response #E059

The calculation of average road density is based on a roading coefficient of 0.0062 mi/acre. (total acres). The higher density of 6 road miles per square mile was determined from statistical sampling of quad sheets. Roading coefficients are discussed in Appendix E of the AMS

Topic #E060

EIS fails to disclose all effects of road building.

Response #E060

The cumulative impacts resulting from road construction and reconstruction are addressed in Chapter 4 of the FEIS. Trade offs for each resource, by alternative, display the cumulative impacts from road building. Road building is typically associated with timber harvest or recreation development and project impacts are analyzed in their entirety as part of these programs. The impacts from roads are not addressed specifically, vis a vis each resource, but rather each resource must consider the impacts roads may have and what, if any, mitigation measures are needed. Standards and Guidelines requires that a site specific analysis be conducted at the project level.

Topic #E061

Guidelines LM3a fails to specify when roads will be closed.

Response #E061

S&GLM3a, now S&G #68, addresses general road closure policy as a means to identify the potential for damage to plant and animal populations as well as potential effects on soils and water quality. Since the

impacts of roads are varied, and many times unique, the project level environmental analysis process conducted in compliance with NEPA was established to mitigate the specific issues for a area, including potential impacts to plants and wildlife

Topic #E062

Alternative A would increase human access to most native animal populations.

Response #E062

The Forest road system construction projections have been reduced significantly. At present, the Forest arterial and collector transportation system is 95% complete. The local road transportation system is 90% complete. Alternative A (now PRF) would construct an additional 30 miles (total) of arterial/collector systems roads. Alternative PRF would also construct an additional 275 miles (total) if local roads. To minimize the impacts of roads on animal populations, all road projects must be analyzed as part of the project level environmental analysis process conducted in accordance with NEPA.

Topic #E063

Monitoring requirements fail to meet 36CFR 219.12.

Response #E063

L 19744 & 750 require annual monitoring and reporting. The greatest risk of resource damage attributable to road construction or reconstruction would occur in first year after the activity is completed. However, the Forest has a comprehensive road operation and maintenance program which includes monitoring of the overall road system by all levels in the Forest Service organization (District, Supervisor's Office, Regional Office). The annual monitoring would be another process to aid in identifying problems that may occur with the transportation system. Corrective actions would be taken as needed

Topic #E064

Plan fails to address extreme weather events.

Response #E064

Catastrophic events are indirectly discussed in cumulative watershed analysis as discussed in response H051.

Topic #E065

DEIS fails to deal with loss of timber productivity associated with roads.

Response #E065

Roads account for only approximately 2% of the (roaded areas) landbase and are necessary to carry on the many land management activities. S&G #68 requires that roads not necessary for management activities be obliterated and brought back into resource production.

Topic #E066

Negative impacts of roads Empire Creek Road, Big Valley Bluff and Pan Timber Sale access roads.

Response #E066

Sierra County Road S514 accesses Empire Creek. There are also numerous private parcels. The Forest Service is not aware of massive soil erosion occurring from the roads under its jurisdiction in the Empire drainage. We are not aware of problems with the Big Valley Bluff Loop Road or the Pan Timber Sale Access Road. We were informed of specific areas where mass erosion is occurring, under the jurisdiction of the Forest Service, corrective action would be undertaken to minimize or eliminate the impacts.

Topic #E067

FEIS must show where road construction is proposed.

Response #E067

The final EIS displays the miles of construction/reconstruction for each alternative. The ten-year sale plan map also shows the location of future timber sales. Specific new road construction/reconstruction needs are determined by project level environmental analyses conducted in compliance with NEPA and are located to minimize impacts to other resources considering user safety and economics. Road locations will be shown as part of the project plan.

Topic #E068

FEIS fails to address dam safety

Response #E068

The FEIS does address the effects and safety of dams and diversions that are under Forest Service jurisdiction. The effects of such structures on the riparian ecosystem are addressed in the analysis process for the project. Participants in this process are generally not limited to Forest Service Resource Specialists. In most cases the appropriate State agencies are included in the process as well as special interest groups and interested individuals. The net effect is that adverse impacts are mitigated to lessen the effects on the environment. In addition, the Forest Service Resources Specialist are included in the analysis phase for projects not under Forest Service jurisdiction.

Topic #E069

Respondents are concerned about damage from Bullards Bar Dam, Sardine Dam and the Little Truckee Diversion.

Response #E069

The Forest Service does not have jurisdiction for the Bullards Bar Dam. It is controlled by Yuba County Water District. A safety inspection of Sardine Dam was made and the dam was breached about 5 years ago because it did not meet earthquake standards. The Little Truckee diversion to Sierra Valley is controlled by the Sierra Valley Water Agency. The Forest Service has no jurisdiction over the project.

Topic #E070

DEIS fails to deal with impacts of log truck traffic.

Response #E070

The impacts of log truck traffic on maintenance of the road system are considered in the FORPLAN modeling of each alternative and included as a cost in the PNV Table.

SENSITIVE PLANTS

Topic #D001

The DEIS and Plan do not display a complete sensitive plant list.

Response #D001

The Regional Forester has recently updated all National Forests' sensitive plant list in coordination with the California Native Plant Society, US Fish and Wildlife Service and California Department of Fish and Game. As a result of that update, six new sensitive plant species were added to the Forest list. For the updated list of sensitive plants, refer to Fish and Wildlife section of Chapter III. Summary of the Analysis of the Management Situation of the Forest Plan.

Topic #D002

Sensitive plants should take priority over commodity production.

Response #D002

The management of sensitive plants is governed by the principles and intent set forth by the Regional minimum implementation requirements (MIR's). The Forest is to manage sensitive plants to ensure that species do not become threatened or endangered because of Forest Service actions in all alternatives including commodity production proposals.

Topic #D003

Sensitive plants were not included as a part of the Forest's Standard and Guideline 23

Response #D003

Sensitive plants are included in Standard and Guideline 23, however, we were in error by not listing sensitive and T&E plants as part of this Standard and Guideline. This error has been corrected in the Final Forest Plan.

Topic #D004

What do the expert agencies, such as the California Fish and Game and the U S Fish and Wildlife Service, say about the Forest only having seven plant species on the Forest list and how does the Forest list compare with the California Native Plant Society list?

Response #D004

The sensitive plant list for the Pacific Southwest Region (PSW) was originally developed by combining

the Smithsonian and the California Native Plant Society (CNPS) lists and the US Fish and Wildlife Service lists. The Tahoe National Forest was then provided with a list of plants known or suspected to occur in the TNF or its vicinity based on historic collections, distribution patterns and specific habitats. Changes in the PSW Regional list are made as new information becomes available, resulting in occasional changes to the TNF list. The Region in association with the US Fish and Wildlife Service, CDFG and CNPS review the Regional list periodically for necessary changes. Also, the California Natural Diversity Data Base is utilized by the Forest to help identify the ranges, numbers and locations of sensitive plant populations. In return, the Forest continually updates the California Natural Diversity Data Base as new information becomes available.

Topic #D005

How does the Tahoe NF survey for unknown sites of sensitive plants?

Response #D005

We use many tools to search for unknown populations of sensitive plants. Some of the tools used are literature search of both printed and herbarium materials, site visits to known locations, review of aerial photos, soil survey maps, vegetation maps, and topographic maps to identify suspected habitat, and on-the-ground surveys of suspected habitats by individuals with botanical expertise.

Topic #D006

A Forest inventory for sensitive plants should be completed by the end of the first planning period.

Response #D006

We would like to see a completed inventory of the sensitive plants on the Tahoe NF as well. An inventory is very important, however, completing the Forest inventory is only part of the total program needed to ensure that the viability of all sensitive species concerned is fully considered. As new information becomes available, additional inventories may be necessary. Under the current Forest sensitive plant program, we inventory several thousand acres each year. The majority of acres surveyed depends on the number and kind of projects proposed. We expand on the current program as additional funding becomes available.

Topic #D007

How does the Forest plan to preserve sensitive plants to ensure that they do not become listed?

Response #D007

We have an active sensitive plant program that ensures all sensitive plant species will be fully considered in Forest planning and project actions. Standard and Guideline 23 of the Forest Plan and the Tahoe National Forest Sensitive Plant Standards and Guidelines that have been incorporated as a part of the Forest Plan, will facilitate this action.

Topic #D008

How will the Tahoe NF implement the Recovery Plan for Mahonia sonnei (MASO)?

Response #D008

The Recovery Plan for MASO identifies various actions to be taken by the U.S. Fish and Wildlife Service, Forest Service, California Department of Fish and Game, etc. to ensure survival of MASO. Some of these actions have taken place such as planting MASO on National Forest System land. We will continue a cooperative effort with these agencies to fulfill the objective of the plan.

Topic #D009

With the limited Forest budget, how does the Forest plan to monitor sensitive plants?

Response #D009

The Forest Service is required by policy and direction to monitor sensitive plants. Funding can be achieved through various avenues; Congressional appropriations, cooperative agreements with other agencies, grants, the proposed project impacting the species, etc. We will continue to pursue these avenues of funding.

Topic #D010

The Tahoe NF needs to increase the Forest budget for monitoring and studies of sensitive plants and the recruitment of professional botanist and biologist.

Response #D010

The Forest has a full-time botanist and seasonal personnel to provide expertise in maintaining the sensitive plant program for species conservation. As stat-

ed in Response #D009, the Forest will continue to pursue other avenues of funding to accomplish this task.

Topic #D011

In dealing with sensitive plants, only two alternatives, E and G, have low risks of disturbance. One alternative has moderate risks and eight have high risks. Obviously nine alternatives in the Tahoe DEIS do not even meet the Forest Service's own Standards and Guidelines.

Response #D011

We disagree. In Chapter 4, The Environmental Consequences of the DEIS, we used the terms of risk (high, moderate and low) by alternative as it relates to the number of acres proposed for ground disturbing activities, and the number of sensitive plant sites which inadvertently could be missed during preproject review. The key word in this statement is 'inadvertently': We will follow Standard and Guideline 23, the Forest Program Standards and Guidelines, the State and Federal laws and the Forest Service Manual direction on all proposed actions. However, the more ground disturbing proposals in an alternative, the more ground will have to be surveyed for sensitive plants **and** the higher risk that some may be 'inadvertently' missed in these surveys. All Forest alternatives meet the sensitive plant MIR.

Topic #D012

The Forest should include sensitive plants as management indicator species (MIS) for their protection.

Response #D012

Because the Forest is directed to include sensitive plants as a minimum implementation requirement (MIR), management must conserve these populations equally in all alternatives. Due to their MIR and unique status, we feel that sensitive plant species would not fit the criteria stated in 219.19 of the regulations. Since the sensitive plant species are conserved and their habitat locations in the Tahoe NF are scattered and infrequently encountered throughout the Forest, these species will not be included on the MIS list for the Forest.

Topic #D013

Species management guides should be completed for each Sensitive plant species and in a timely manner.

Response #D013

It is very important that each sensitive species be managed by a species management guide. We are actively involved in pursuing this task by completing necessary ecological data and management directions toward writing these management guides. We will prioritize these efforts and completion of the management guides in a timely manner.

Topic #D014

The Forest Plan should address the introduction and control of exotic weed plants.

Response #D014

The Forest Plan does address the introduction and control of exotic weed plants. Standard and Guidelines 72 through 79 of the Forest Plan provide the direction to deal with this issue.

TOPIC #D015

I have discovered Berberis nervosa about one mile east of Euchre Bar Footbridge.

Response #D015

B. nervosa (Oregon grape) is found extensively in the coastal range. This species may be considered uncommon in the Sierra foothills, but not rare because of its common association with Douglas fir. Thank you for sharing your find with us.

Topic #D016

What effect does livestock have on threatened, endangered and sensitive plants?

Response #D016

Grazing is managed at levels which will not degrade vegetative communities. If any conflicts occur, they will be resolved on a project-by-project basis through the NEPA process and reflected in the range allotment management plan.

Topic #D017

The Forest Plan does not allocate essential or critical habitat for sensitive plants.

Response #D017

The Forest Plan does ensure that habitat for sensitive plants is conserved. Management of sensitive plants follows the direction set forth in the Standard and Guidelines required to conserve sensitive plants, the Forest Service Manual and the R-5 Threatened and

Endangered Plants Program Handbook. Habitat required to conserve sensitive plants varies on a case-by-case basis depending on individual species needs to ensure species Viability.

Topic #D018

Maps of essential and critical habitats for threatened, endangered and sensitive plants should be included in the Forest planning documents

Response #D018

The only Federally-listed species (Mahonia sonnei) has yet to be located on the TNF. However, the Forest is working with the USFWS in its recovery. When this species was listed by the USFWS, the Secretary of the Interior did not identify habitat for this species. Sensitive plant populations are mapped as they are discovered. Since habitat data is constantly changing through new surveys, etc., the Forest will keep this information as part of the working files and incorporated into the Tahoe National Forest Sensitive Plant Standards and Guidelines. Due to the volume of the Forest Sensitive Plant Standards and Guidelines, they were identified in Chapter I of the Forest Plan as one of the plans that is incorporated by reference, but will be amended as needed

Topic #D019

What will be the impacts on the sensitive species Eriogonum umbellatum var. torreyanum by encouraging skiing in the Tinkers Knob area?

Response #D019

The needs of the sensitive plant EMUM var. torreyanum will be fully considered during the environmental analysis of the proposed project as evaluated through the NEPA process. No management activities will be allowed that will jeopardize the species viability.

Topic #D020

The Forest Plan displayed a bias that ground disturbing projects will negatively impact sensitive plants by creating high risk to them.

Response #D020

Ground disturbance can have an adverse impact to sensitive plant populations. Timing, intensity, and frequency of various ground disturbing activities need to be considered as they relate to sensitive plant populations. See Response #D011 for further clarification

Topic #D021

The DEIS did not display a comparison of how each alternative affects sensitive plant species.

Response #D021

We display this information in Chapter 4 The Environmental Consequences. For further clarification regarding this section, see Response #D011.

Topic #D022

The Forest should display a summary of information on each sensitive plant in the DEIS

Response #D022

See Response #D018

Topic #D023

We are concerned with the Forest Service's attitude to limit sensitive plant inventories to searches for the species presently known on the Forest.

Response #D023

The Regional Forester's sensitive plant list as allocated to the Tahoe NF are those sensitive plants 'suspected' as well as known on the Forest. Suspected and known sensitive plants are treated equally in preproject planning.

Topic #D024

The Forest should create a 150 foot buffer zone around populations of sensitive plant populations to protect them against such activities as grazing, timber harvesting, etc.

Response #D024

Each sensitive plant population must be accessed on a case-by-case basis according to the species needs. The suggested buffering practice could meet the concerns of some sensitive plant species, but negatively impact others

Topic #D025

Any use of pesticides or herbicides will not be permitted within or up-slope from sensitive plant populations.

Response #D025

The sensitive plant concerns will be fully considered through the NEPA environmental process prior to the

implementation of the project including whether or not to use pesticides or herbicides

Topic #D026

Timber harvest will be allowed only where it is necessary for the continued viability of the species.

Response #D026

The sensitive plant concerns will be fully considered through the NEPA environmental process prior to the implementation of the project.

TOPIC #D027

The Forest should coordinate with other Forest sensitive plant coordinators and the California Department of Fish and Game's Natural Diversity Data Base on population, habitat and rare status information dealing with sensitive plants.

Response #D027

The Forest does coordinate not only with other Forests and the Natural Diversity Data Base, but other agencies, private landowners, institutions of higher learning and botanical organizations and individuals on sensitive plant populations, habitat and rare status information

Topic #D028

I recommend the community classification system adopted by the California Natural Diversity Data Base. The Forest Service should develop baseline information on special communities for long-term monitoring purposes.

Response #D028

Various attempts have been made to classify plants according to their habitats or environments, and according to their responses to the environment. The Pacific Southwest Region is currently developing the Ecosystem Classification System of which we feel will be far more comprehensive than the classification system adopted by the CNDDDB. The aim of this classification system is to classify ecosystems based on the potential vegetation and soils of the site. We are attempting to classify stable, late seral stage plant communities which, when examined in an integrated fashion with the soils, will give us a classification of ecosystems based on the potential vegetation and soils and geomorphology. Baseline information on special communities for long-term monitoring can also be achieved if the special communities are located within an established Research Natural Area (RNA).

Topic #D029

The application of herbicides will perpetuate invasion of exotic weeds.

Response #D029

We disagree. Herbicides are used to assist management in the removal of exotic weeds. *Also*, see Responses #D014 and #D025.

Topic #D030

Without a land management plan of selective harvesting, rare wildflowers could be lost.

Response #D030

The Forest Land Management Plan provides direction to ensure the viability of sensitive plant species will be continued regardless of the management practices implemented.

Topic #D031

Selective cutting would attract more tourist dollars through use of the forest for hiking, sightseeing and natural habitat for endangered fauna and flora.

Response #D031

The Forest Plan provides different mixes of integrated management prescriptions, resulting in various levels of *outputs*, goods and services. Selective cutting is one of several management prescriptions that will be implemented to achieve these benefits and provide adequate habitat for the native fauna and flora. For the response dealing with the recreation part of this question, please refer to #T089.

Topic #D032

The DEIS fails to designate any plant Management Indicator Species (MIS) even though the proposed logging, grazing and road building activities will have serious negative impacts on the populations of many of these species.

Response #D032

We considered the use of plants as MIS. We did not choose to use any plants as MIS because various seral stages of vegetative types are being monitored to meet other resource objectives. **No** particular plant species was identified to evaluate effects of standards and guidelines, prescriptions, etc. For the discussion on sensitive plants as MIS, see Response #D012. However, on S&G's and **NEPA**, etc., MIR for sensitive plants will ensure that *serious neg-*

ative impacts on plant populations will not occur. In addition, see #D007 for further clarification

Topic #D033

A large population of the rare and endangered Cantelow's Lewisia grows with a spectacular community of uncommon plants in the canyon of the Middle Fork and the South Fork of the Yuba River

Response #D033

We have added this species to the Forest Sensitive Plant list and *will* manage it accordingly. Thanks for sharing this information

Topic #D034

Pages 3.43 and 4.40 of the **DEIS** violate NEPA by failing to discuss and disclose the adverse impacts of land exchanges on unique habitats, rare and endangered plant species and communities.

Response #D034

See Response #D007. The Standards and Guidelines of the Forest Plan will ensure that unique habitats, rare and endangered plant species and communities will be fully considered through the **NEPA** process.

Topic #D035

There are rare plant communities, including three of the known populations of the rare and endangered LESE and PHST, located in the North Fork of the Middle Fork American River.

Response #D035

Thank you for sharing this information with us. We have identified several populations within this river drainage and are managing them according to FSM direction.

Topic #D036

To accurately disclose the effects of each alternative on the size and distribution of native plant and animal populations, predictions must be based on empirical data gathered from historical experience **with** each species. Data on the effects of logging, human disturbance, and 'minimal management' (ecological change only), on the size and distribution of populations of each native species and the habitat requirements and home range sizes of each species must be collected. This data is vital to predict potential distribution and population size of native organisms by alternative.

Response #D036

We will not be able to finish a complete inventory of all native plant and animal populations in this planning period. Plant and animal communities are constantly changing which makes a complete inventory economically and physically prohibitive. However, we analyze the potential effects of management activities on native populations through the NEPA process before the proposed action is permitted. Additional information is collected through the monitoring of the actions once they are implemented. **Also**, the Region is developing the ecosystem classification program. The aim of this classification system is to classify ecosystems based on the potential vegetation and soils of the site. We are attempting to classify stable, late seral stage plant

communities which, when examined in an Integrated fashion with the soils, will give us a classification of ecosystems based on the potential vegetation and soils and geomorphology.

Topic #D037

The Forest Plan needs to cover medicinal plants; they must be surveyed, inventoried and protected.

Response #D037

See Response #D036. However, the Forest would appreciate your help in determining which plants are of value to you as medicinal plants.

SOILS**Topic #S001**

Logging should not be allowed on 'sensitive soils,' high elevation sites, steep slopes, or south-facing slopes because of the **loss** in soil productivity.

Response #S001

Forestwide Standard and Guideline (No. 55), *Maintain Soil Productivity*, was developed in response to this issue. This S&G protects the productivity of all soils, not just those mentioned in the topic, by establishing. (1) minimum soil cover to prevent accelerated soil erosion, (2) maximum loss of porosity by compaction, and (3) minimum amounts of large woody material and forest duff to maintain nutrient reserves and nutrient cycling.

Topic #S002

Maintain ground cover and the soil duff layer to protect soils against erosion from clearcut timber harvest

Response #S002

Forestwide Standard and Guideline (S&G) 55 includes minimum soil cover standards for specific soil types and guidelines for maintaining forest duff. This S&G applies to all timber harvest activities, including site preparation and cultural treatments, not just to clearcuts.

Topic #S003

Soil erosion affects long-term productivity.

Response #S003

Soil erosion and soil formation are natural processes. Soil erosion affects long-term soil productivity only when the rate of soil lost exceeds the rate of soil formation. Forestwide Standard and Guideline 55 provides minimum soil cover amounts for specific soils. The soil cover requirements were developed to assure soil loss by erosion would not exceed the rate of soil formation.

Topic #S004

I am opposed to anything that will cause soil erosion.

Response #S004

See Response #S003

Topic #S005

Need more emphasis on soil resource protection.

Response #S005

We agree that maintaining soil productivity is very important. This issue received more emphasis in the final EIS than in the draft. Forestwide Standard and Guideline 55, *Maintain Soil Productivity*, was developed to protect the soil resource and will be added to the Final Forest Plan

Topic #S006

Reevaluate the guidelines for sensitive soils.

Response #S006

The Forestwide Standard and Guideline developed for maintaining soil productivity will be applied to 'sensitive soils' as well as to all other forest lands. In the draft plan the term 'sensitive soils' was incorrectly used. This term has been changed in the final plan to 'sensitive watershed lands'. These lands produce high amounts of runoff. They were identified as one step in a process to calculate cumulative watershed effects.

Topic #S008

Can the long-term productivity of the land be maintained under intensive forest management? Can we be sure long-term productivity will not be impaired?

Response #S008

Based on current knowledge, long-term soil productivity can be maintained if soil erosion and displacement, soil compaction, and loss of organic matter, are limited. The Forestwide Standards and Guidelines provide these limitations

Topic #S009

Deep, rich soils on Foresthill Divide can provide sustained yield of high quality timber.

Response #S009

Some of the deep soils on the Foresthill Divide are highly productive. Highly productive soils are not restricted to Foresthill, they also occur elsewhere on the Forest.

soils

Topic #S010

Manage soils to maintain the current level of outputs.

Response #S010

The current level of outputs can be maintained with a relatively low risk to cumulative effects on long-term soil productivity, if Standard and Guideline 55, Maintain Soil Productivity, is implemented and monitored for implementation and effectiveness. See EIS, Chapter 4.

Topic #S011

Soil compaction reduces productivity. Log over snow to reduce impacts

Response #S011

Logging over snow is only one of many measures that can be used to mitigate soil compaction. Another measure is the use of aerial systems such as short-span skyline or helicopter; yet another is designation of skid roads and endlining. Forestwide Standard and Guideline 55 limits the extent of soil compaction in an activity area.

Topic #S012

Clearcutting and burning causes soil compaction.

Response #S012

Clearcutting and burning do not necessarily cause soil compaction. Operation of heavy equipment on the soil when it has low strength causes soil compaction. Aerial yarding cut trees and broadcast burning would cause very little soil compaction. However, tractor yarding and piling slash with a tractor may cause soil compaction. Forestwide Standard and Guideline 55 limits the extent of soil compaction. See response #S011

Topic #S013

Clearcutting and burning causes landslides and mudslides.

Response #S013

Clearcutting has the potential to cause a landslide or mudslide only under a very specific combination of geologic, topographic, soils, and climatic characteristics. These conditions are looked for by a geologist during environmental analysis in compliance with NEPA for projects. On the Forest, no landslides, and only a few very small slumps, have been found that

could be partially attributable to clearcutting. See responses #S032, #S035, #S036, #S037.

Topic #S014

The plan lacks meaningful considerations of long-term soil loss, nutrient loss, productivity decline, and erosion. One of the weakest elements in the DEIS is the section on soil.

Response #S014

All sections on soil have been revised in the final EIS and Plan. Forestwide Standard and Guideline 55 was developed to maintain long-term soil productivity. This Standard and Guideline includes soil cover requirements to limit long-term soil loss, a standard on maintaining soil porosity which limits compaction, and standards for maintaining forest duff and large woody material that provide organic matter, habitat for microbes and small organisms, all of which are important to nutrient cycling. Appendix H of the EIS explains how this Standard and Guideline mitigates these concerns. Implementation of the Forestwide Standard and Guideline 55, will assure long-term soil productivity will not be significantly impaired. The Standard and Guideline applies to all alternatives.

Topic #S015

Reliance on Best Management Practices (BMPs) to maintain soil productivity is not legally sufficient

Response #S015

This is correct. Best Management Practices were developed to protect and maintain water quality, not to maintain soil productivity. Forestwide Standard and Guideline 55 provides the necessary protection to maintain soil productivity.

Topic #S016

Soils are a complex and fragile system in which plants and microbes interact to support higher life forms; they must be managed with care; we must revere and value the soil resource. Artificial manipulations and type conversions of forest ecosystems will interfere with recycling of soil nutrients.

Response #S016

Forestwide Standard and Guideline 55 recognizes forest soils as complex systems. Standards for soil organic matter and porosity were developed to maintain soil productivity by maintaining the soil as suitable habitat for a host of microorganisms, insects, and small animals, as well as a medium for the growth of higher plants. Manipulation of vegetation

may reduce organic matter in the short term, however, most soils will recover as they have in the past after natural wildfires After vegetative manipulation, either the same plant species, or species from the previous seral stage, will reemerge. See Response #S014

Topic #S017

Clearcutting and burning destroys nitrogen and sets barren soil back to primary succession, and soil cannot be held on the land to build up nutrients.

Response #S017

Some nitrogen and other nutrients are volatilized and lost when logging residues are burned However, burning of residues also releases nutrients, making them available for use by other organisms Forestwide Standard and Guideline 55 sets standards for maintaining soil cover, and provides guidelines for maintaining duff and large woody material to provide a nutrient reserve and to protect the soil from erosion. Also see responses #S001, #S002, #S003, #S014, and #S016

Topic #S018

(There is too great an) emphasis on commodity outputs at the expense of soils, the base of all forest ecosystems.

Response #S018

The soil resource received more attention in the final EIS and Plan than in the draft. Forestwide Standard and Guideline 55 was added to protect the soil resource and maintain long-term soil productivity, and would be applied to all alternatives, whatever the commodity output. Also see responses #S008 and #S010

Topic #S019

Releasing poisons on the land can contaminate the soil What is the effect of herbicides and fertilizers on the soil?

Response #S019

The herbicides and fertilizers used in Forest management are biodegradable This biodegradation is carried out by soil microorganisms which use these chemicals as a food source The biodegradation process, however, is dependent upon a supply of organic matter to maintain microbial habitat and a viable population of microorganisms Herbicides, and some elements of fertilizers, are held in the organic fraction of the soil. Control of surface erosion and maintenance of soil organic matter thus

prevent the transport or leaching of these chemicals into stream courses or groundwater. Maintaining forest duff and litter, in addition to providing microbial habitat, also provides soil cover to prevent surface erosion Forestwide Standard and Guideline 55 provides for soil cover, duff, and large woody material, all of which maintain these processes

Topic #S020

We recommend that a "T" factor (soil loss tolerance) be set for all soils and be used to determine management levels

Response #S020

Soil loss tolerances (T factors) are based on rates of soil formation. Soil loss tolerances have not been established for upland soils because rates of soil formation from bedrock are not specifically known However, research on soil formation indicates rates of soil formation from bedrock are generally too slow to justify soil loss tolerances greater than about 1 ton per acre per year Forestwide Standard and Guideline 55 requires a minimum Effective Soil Cover for each soil that was calculated to limit soil loss to less than about 0.75 tons per acre per year. Also see EIS Appendix H, Soil Productivity

Topic #S021

Use Site specific analysis, the completed SRI, or soil characteristics to determine suitability for projects and to develop management prescriptions.

Response #S021

The Soil Survey report (SRI) is used during environmental analyses performed in compliance with NEPA to identify potential soil management concerns. When a critical concern is identified, or when project planners cannot mitigate a soil management concern, a soil scientist is called in to assist the interdisciplinary team in developing site specific management prescriptions that protect all resources.

Topic #S022

Need to base timber productivity on soil potential rather than site class.

Response #S022

Soil productivity is defined as the inherent capacity of a soil to support the growth of specified plants, plant communities, or a sequence of plant communities Soil productivity may be expressed in terms of volume or weight/unit area/year, percent plant cover, or other measures of biomass accumulation and

Soils

may be used as an index of timber productivity potential. Site class and its equivalent potential yield are also valid measurements of timber productivity when the stands measured occur on uniform soils

Topic #S023

Reclaim soils where productivity has been lost (identified in SRI).

Response #S023

Forestwide Standards and Guidelines have been established for soil resource improvement. These require project planners to identify areas of soil damage, abandoned roads, and soil which have been altered by past management activities, and to evaluate the opportunity to improve soil productivity. Where the evaluation shows reclamation is feasible, and funds are available, soil improvement projects are carried out

TOPIC #S024

Top priority should be given to completing the Order 2 SRI.

Response #S024

The Forest has completed about 10,000 acres per year of Order 2 SRI since 1986. Lack of staffing, limited funding, and higher priorities have made it impossible to appreciably accelerate the survey.

Topic #S025

Data on soils is less factual for remote, roadless areas.

Response #S025

This is not necessarily true. When conducting an Order 3 Soil Resource Inventory, photographic interpretation is a very powerful technique used to project patterns of soils associated with landforms and vegetation. With ground truthing it is quite reliable. Although ground truthing is more effective in roaded areas because roadcuts expose more soil for field study, ground truthing was also done in roadless areas

Topic #S026

The GRI is not provided. It is needed to manage ground water resources and to assess the risk of land instability

Response #S026

The need for a Geologic Resource Inventory has been identified in Appendix N, Resource Planning

Needs, to provide this information for future planning.

Topic #S027

Need analysis of the individual and cumulative effects of soil disturbance, erosion, and compaction.

Response #S027

In the final EIS the cumulative effects of management activities on the soil resource have been extensively analyzed for all alternatives. See EIS, Chapter 4.

Topic #S028

Need to implement a strong monitoring program to maintain soil productivity. Appoint citizens to act on monitoring

Response #S028

The monitoring requirements for soils have been expanded in the final plan. Specifically, the implementation and effectiveness of Forestwide Standard and Guideline 55 will be monitored. The use of volunteer groups or citizens to assist in monitoring is a practical idea and will be explored.

Topic #S029

071 Tinker's -- Tinker Knob is geologically unique.

Response #S029

Tinker Knob may be visually prominent, but it is not geologically unique. There is a chain of peaks in this area which are geologically similar

Topic #S030

The plan fails to discuss and analyze the long-term cumulative impacts of road building and road maintenance on long-term forest productivity, soil compaction, soil erosion, and soil displacement.

Response #S030

The environmental consequences of these activities on the soil resource are analyzed in Chapter 4 of the final EIS

Topic #S031

Clearly demonstrate the intent of management by displaying the number of acres identified for soil restoration in each Management Area.

Response #S031

It is not possible to specify which potential sites are suitable for soil restoration without on-site investigation

tion and analysis Forestwide Standards and Guidelines direct project planners to identify and evaluate opportunities to improve soil productivity Also see response #S023

Topic #S032

A Geologic Hazard Analysis is in its infancy despite the presence of a considerable acreage of geologically unstable contact zones in the forest. Thousands of acres of steep slopes situated on these contact zones between older metasedimentary rocks and younger andesitic overlays have been included as suitable for management in the timber base

Response #S032

See Response #S026 and #S013. In addition, upon completion of the GRI, some land may be removed from the timber base.

Topic #S034

The extensive slides in the Oregon Creek drainage resulted from the Mountain House fire. The large scale application of intensive timber management in the TNF will have environmental effects of a similar nature and order of magnitude.

Response #S034

A valid comparison of the effects of timber management practices and wildfires on slope stability is difficult to make. Forestwide Standards and Guidelines place specific limits on the size and concentration of timber harvest units. Unit and road location in areas deemed potentially unstable as a result of geologic, topographic, and past slope-instability evidence is also limited. Obviously no such limitations exist for the location and size of wildfires. The current development of a Geologic Resources Inventory will assist Forest managers in the placement of harvest units to minimize the risk of landslides as a result of management practices.

Topic #S035

The slides in the headwaters of Washington Creek resulted from logging activities on geologically hazardous slopes. The occurrence of logging culls indicates that the slide is within the 3040 acre clearcut block which is in the headwaters of Washington Creek. This unit was cut about eight to ten years ago.

Response #S035

The idea that timber harvesting can adversely affect slope stability is well accepted, and many studies

have been/are being conducted to increase understanding of the causes and solutions to this problem While slope stability in the Washington Creek area may have been adversely affected by timber harvesting, air-photo evidence of pre-harvest slides in the drainage, the existence of landslides in adjacent uncut drainages, and the local geologic and topographic conditions suggest that the area is naturally susceptible to sliding. It appears that landslides can be expected to occur whether or not timber is harvested. The development of a Geologic Resources Inventory and the renewed emphasis on giving geologic input to timber sale proposals will assist in minimizing the placement of timber sale units in potentially unstable areas. Also see Response #S034

Topic #S036

DEIS page 3.37 and 4.36: these sections violate NEPA by failing to discuss and disclose the extent of geological instability in the project area and likelihood for extensive landsliding if future timber cutting occurs on known contact zones. The DEIS fails to disclose where important geological contact zones exist between the older metasedimentary bedrock and the more recent andesitic mud flows. It fails to disclose the importance protecting these sensitive areas.

Response #S036

Much of this information is not yet known Preliminary studies show that the 'contact zone' that influences landsliding is more often between the Mehrten mudflows and Valley Springs tuff than between mudflows and metasedimentary rocks. We know that it is important to proceed with caution in these areas and therefore have a landslide hazard analysis project underway currently to study the highest priority area; future analyses will expand from this area into other areas and eventually cover the entire Forest Also see Responses #S013 and #S026 In project analyses, site-specific geologic hazards will be evaluated.

Topic #S037

The relationship between logging practices and the landsliding that occurred in the Oregon Creek drainage and at the headwaters of Washington Creek must be disclosed along with the probable occurrence pattern of landsliding associated with intensive timber management practices on similar areas in the future. Protective actions will be taken to ensure that irretrievable soil productivity losses associated with landsliding do not occur and must be described.

Soils

Response #S037

We cannot disclose something we do not yet know. The relationship between Oregon Creek and Washington Creek will be initiated this summer (1988) Protective actions will be defined in the Forestwide Standards and Guidelines Again, in project environmental analyses conducted in compliance with NEPA, site-specific geologic hazards will be evaluated.

Topic #S038

As a result of the construction of Bullards Bar Dam and Reservoir, irretrievable losses of soil productivity are occurring in the canyon of the North Yuba

River. The super-saturated canyon walls are eroding and sliding resulting in rapid siltation of the reservoir and triggering secondary and tertiary landslides in the unstable and highly erosive granitic soils of the area.

Response #S038

The erosion and slumping is occurring below high water level, reservoir capacity lost by siltation is offset by the increased capacity created by the slumping and erosion. No productivity is being lost above high water level.

SPECIAL INTEREST AREAS

Topic #R066

There is support for giving Special Interest Area (SIA) status to all areas considered in the Draft Plan. Many respondents indicated that they felt that standard management practices would not give adequate protection to the values of these areas.

Response #R066

Sixteen SIA's were considered in the preparation of the draft Forest Plan. The draft PRF Alternative emphasizes a balance between amenity values and commodity production. The effect on timber production was considered when the SIA's were evaluated. Other factors including land ownership, land uses, existing improvements and encumbrances, recreation opportunity, mineral potential, and effects of designation on other resources were also considered in the evaluation. How well the area satisfied the criteria of being unique or special was considered and given great weight in the recommendation for SIA classification.

Several of the alternatives gave emphasis to other attributes rather than commodity production. Under these alternatives, additional or fewer areas were proposed for SIA designation.

Following is the disposition of the SIA candidate areas, the rationale behind the disposition, and how areas will be protected if not designated as a SIA.

1. **Placer County Big Tree Grove** This area is designated because it is truly unique in that it is the northernmost natural occurrence of *Sequoiadendron giganteum*. The Forest Service has recognized the unique nature of this grove and given special management considerations to the area. Designation as an SIA will formalize current management practices.
2. **Devil's Postpile Geologic Area.** The area is designated as a SIA. This feature is not unique as a geologic phenomenon; however, because of its prominence on the edge of a canyon, it is visually striking and conducive to public interpretation. Commodity tradeoffs are not significant. Designation as a Geologic Area will give the area special emphasis and should result in more visitors to the area. Management of the area will emphasize maintenance of visual quality and interpretation of the geologic features for public enjoyment.
3. **Glacier Meadows Geologic Area** The area is designated as a SIA. This area represents an excellent example of a glaciated landscape of scoured granite overlain by large boulders. Designation as a Special Interest Area will emphasize the interpretation of the geologic phenomenon which took place. Commodity production is insignificant. There is a potential for heavy recreation use, if developed, because of the proximity to Interstate 80.
4. **Grouse Falls Scenic Area.** The area is designated as a SIA. Grouse Falls is a unique cascading falls and as such is worthy of designation as a Scenic Area. The rugged terrain adds to the scenic quality of the falls. Designation as a Scenic Area will give it special recognition and should result in more visitors to the area. The area has some mineral potential and will be proposed for withdrawal to protect its scenic character.
5. **Hawley Lake Cultural Area.** This area is not designated as a SIA although it does contain numerous prehistoric sites. Generally speaking, the sites are typical for high elevation portions of the Sierra Nevada Mountains.

These sites are protected under existing laws. The area is highly mineralized and will not be withdrawn from mineral entry. As a result, there might be some threat to the integrity of the sites should mining activities occur. It is felt that mining regulations will provide adequate control over these activities. Other commodity tradeoffs are minimal. The primary benefit of not designating the area is that it will not focus attention on the sites and therefore should help to minimize the possibility of vandalism.
6. **Meadow Lake Cultural Area** This area is designated as a SIA for the historic and prehistoric sites it contains.

Commodity tradeoffs are not significant except for the mineral potential within the area. The area will be proposed for mineral withdrawal, which will provide additional protection for cultural resources. Management of the area will emphasize preservation of scenic values and interpretation of historic and prehistoric sites.
7. **Boca Cultural Area** This area is not designated as a SIA even though it contains historic and prehistoric sites. While interesting, the historic

Special Interest Areas

sites are of local interest. The cultural sites are typical for the high elevation Sierra Nevada Mountains and therefore not unusual enough for designation.

The area is adjacent to Interstate 80 and receives heavy recreation use. Commodity production is not significant. The master plan for recreation development of the Boca Area will provide for some interpretive facilities for the historic and prehistoric sites.

8. *Kyburz Cultural Area* This area is not designated as a SIA, although it contains numerous historic and prehistoric sites. There are many cultural sites but they are typical for the Sierra Nevada Mountains and the historical sites are of local interest. Therefore the area is not considered unusual enough for SIA designation.

Commodity production is not significant. Sites would be protected in accordance with existing laws. The primary benefit of not designating the area is that it will not focus attention on the sites and therefore should help to minimize the possibility of vandalism to the sites.

9. *Sagehen Headwaters*. This area consists of an undisturbed ecosystem with a wide variety of species. Furthermore, the area has been studied extensively. Because of these characteristics, the area will be managed as a SIA primarily to further research. Commodity production is insignificant, and current land use is primarily for study and research.

10. *Sierra Buttes*. This area is not designated as a SIA even though the green spleenwort *Asplenium viride*, occurs at its southernmost point in this area. The plant is rare locally, but common and widespread outside the State of California. Therefore, it is not uncommon enough for designation.

Because the plant is growing on a cliff, where it is unlikely that it will be disturbed, special management actions are not required. Furthermore, much of the area is in private ownership. The area is mineralized and could be subject to mineral development, however, it is believed that mining regulations will provide adequate protection for the species, should mining be proposed.

11. *Little Truckee River Terrace*. This site is not designated as a SIA even though it does con-

tain soils that are used for reference to the degree of soil development, and it provides a unique setting for the sagebrush plant community. Commodity production potential is minimal. The site does not contain any values that are truly unique and the values of the soils studies area can be protected without SIA designation.

12. *Sagehen Creek Basin* This area is not designated a SIA even though the area contains many bogs, fens and wetlands.

The entire site of 8300 acres does not contain any values that are truly unique. The values that do exist can be protected without SIA designation. The best example of a fen, *Mason Fen* is being proposed for SIA designation. See item 18.

13. *Independence Lake*. This area is not designated as a SIA although it contains a population of *Lahontan Cutthroat trout*. Most of the lands in this SIA are privately owned. Other populations of pure *Lahontan cutthroat* exist, therefore survival of the species is not dependant on this area. Lack of control over private lands limits the significance of designation.

14. *Headwaters Basin of the North Fork of the American River*. This area is representative of many areas of the Central Sierra Nevada and is unique only in that it is relatively undisturbed. The area is not designated as a SIA. The *Onion Creek Experimental Forest* lies within the area and will be managed to facilitate research. Commodity outputs are minimal, due to management direction even though there is a potential for significant timber harvest. A near natural setting will be maintained.

15. *San Juan Ridge*. This area is representative of many areas of the Central Sierra Nevada where *Tertiary auriferous gravels* are located. The area is not designated as a SIA. Commodity outputs are significant, with high mineral potential and timber outputs. Management as an SIA would be difficult because there is so much private land involved, and would limit the significance of such designation.

16. *Macklin Creek* This area is not designated a SIA although it contains a population of *Lahontan cutthroat trout*. Most of Macklin Creek,

which contains the trout, is owned by the State of California or is in private ownership. The State purchased the lands to protect the species. Because there is very little National Forest land involved, management of Macklin Creek as an SIA would be difficult and would have little significance.

17. *Wild Plum White Fir Forest* This area was eliminated from consideration because of past logging of the private lands. Private lands make up about one-half of the lands under consideration
18. *Mason Fen* This area is designated a SIA because this Fen represents the largest and best example in the Sagehen Basin vicinity. This area also has been the subject of research since 1957 from the University of California at Berkeley. Two carnivorous plants are common on this Fen and are considered an unusual occurrence in California.

Topic #R067

There is support for giving SIA status to areas in addition to those proposed in the the draft plan. It is felt that giving these areas SIA status is necessary to protect the features which are more or less unique to the area. Also, there is a concern that standard management practices will not be adequate to protect the values of some areas.

Areas mentioned for SIA designation included Middle Yuba River, Deep Canyon, Robinson Valley, Basin Peak, Mt. Lola, Volcano Canyon, Fordyce High Lakes, Logan Canyon, Granite Creek, Duncan Canyon, Lafayette Ridge, Alder Creek Meadows, Loch Leven Lakes, Babbit Peak, Yuba River, Paleontologic Areas, Sailor Flat, Green Valley, Euchre Bar, the Pacific Crest Trail, the Western States Trail, Bowman Lake Area, the Washington Area, Graniteville Road, Fauchene Road, Union Creek, East Orchard, Onion and Cedars Area

Response #R067

Although the above areas may have some local significance, they do not provide unique or outstanding examples of their features when viewed from Regional perspective. Some areas, such as Green Valley, Loch Leven Lakes, the Washington and Cedars areas, and Mt. Lola, are either entirely or primarily located on private land. Other areas, such as the Pacific Crest Trail and Paleontologic areas, are already receiving special management emphasis and consideration. In general, the above mentioned ar-

reas will be managed in accordance with the management theme for the lands on which they occur, and adequate consideration for their local significance will be given during project planning

The Long Point area was specifically mentioned regarding preservation of the old growth timber. A number of areas will be managed in a manner whereby old growth timber will be maintained including Spotted Owl Habitat Areas, Wilderness, and Wild River areas.

The Castle Peak area was mentioned regarding SIA designation to preserve sensitive plant species, protect the watershed, and to halt grazing. Much of this area, including Castle Peak, is privately owned. Current policy and laws provide protection for sensitive plant species and watershed values

The Rock Creek area was mentioned regarding the occurrence of plants unique to the area. The area containing these plants will be managed in accordance with current policy and laws. Plants of local significance will be given consideration during project planning.

SIA designation for the Humbug, Sailor, and Brimstone Management Areas was recommended to protect these areas for continued use in field education. Such designation is not necessary as the management of these areas will accommodate these activities.

Topic #R068

How will those areas special to certain user groups be managed? There are many special areas throughout the TNF which must be placed in a different management category to ensure protection of their special qualities such as areas which contain rare or unique plant species, animal species, or other unusual natural features.

Response #R068

Areas that have been identified which contain rare or unique plant species, animal species, or other unusual natural features have been evaluated to determine what kind of management is appropriate to protect their specific needs. This may range from a Research Natural Area, Special Interest Area, National Natural Landmark, or Spotted Owl territory to knowing the location of sensitive plant populations and requiring specific management practices according to the Forest Standards and Guidelines at the project level to ensure the plant species is not jeopardized by our actions.

TIMBER, GENERAL

Topic #T001

The Proposed Forest Plan is biased toward the needs of the timber industry. Other resources such as recreation, wildlife, water and visual quality should receive greater emphasis.

Response #T001

The proposed Plan was modified to respond to those concerns. Many of the areas planned for timber management have been allocated for other uses. Some examples are changes in management emphasis for spotted owl habitat areas, stream-course zones, and the North Fork American River Canyon.

Of the **794,000** acres within the Tahoe National Forest, **528,474** acres are suitable for timber production. Of the **528,474** acres, **747,663** acres are managed for timber production in combination with aesthetics, watershed, wildlife and recreation. **759,007** acres will be managed primarily for resources other than timber.

Land is allocated to the combination of management activities for which it is most suited. Many site-specific management emphasis changes have been incorporated into the final Plan. These changes generally reallocate lands from intensive timber management to another resource emphasis.

Topic #T002

No timber harvest should be done in the North Fork American River Canyon.

Response #T002

A new Management Area (American MA #087) has been created within a portion of the North Fork American River Canyon. This MA includes sensitive watersheds in the steep inner gorge where timber harvest activities could adversely affect visual, wildlife, fishery, and watershed values. Management emphasis will be to maintain its semi-primitive, nonmotorized character which currently exists. No new roads will be constructed and this MA will be considered unsuitable for regulated timber management.

Timber harvest activities will still be considered for the Canyon area remaining in the original Humbug-Sailor Management Area but with some constraints. Activities will be constrained by three spotted owl

habitat areas, visual concerns along identified trails or viewpoints, and new soils and watershed standards and guides developed for the final Plan.

See Response T070

Topic #T003

The Tahoe National Forest should not be overharvested to compensate for poor management on private lands.

Response #T003

The allowable sale quantity (ASQ) for the Tahoe National Forest was based on the capacity of the available, capable, and suitable forest land base to produce timber and does not exceed the long-term, sustained-yield capacity of the Forest. Management of private land, whether good or bad, has no bearing on the ASQ. Under no circumstances will the TNF be 'overharvested to compensate for poor management on private forest lands.

Topic #T004

Export of USFS timber products should not be allowed.

Response #T004

Federal law prohibits the export of unprocessed USFS timber. Once logs are remanufactured, there are no restrictions on exports and the Forest Service has no authority to limit or regulate the free trade in timber products.

Topic #T005

Logging on steep slopes which results in erosion should not be done.

Response #T005

The diligent application of Forestwide Standard and Guideline (No. 55), Maintain Soil Productivity, will protect the productivity of soils. See Response # S001. We will monitor the effectiveness of this S & G and will implement additional measures if needed.

Generally, logging of steep slopes [greater than 35%) will utilize cable or aerial logging systems. Use of these systems results in much less soil disturbance and potential for erosion than ground-based logging systems.

See Response T062.

Topic #T006

Timber sale administration is not adequate to control the logging operations on the TNF. Lower Forest Service budgets will aggravate this problem.

Response #T006

We make the best use of available funding and personnel to ensure acceptable compliance with contract requirements. The annual funding for timber sale administration varies depending upon anticipated harvest levels, other program needs, and the overall availability of funding. Harvest levels can also vary widely from year to year as the lumber market fluctuates. We will ask for sale administration funding based on our best estimate of harvest levels. If the Forest Service's overall budget is reduced, it would be likely that sale administration funding would also decrease

Topic #T007

Cutting of low value species should not be subsidized by cutting higher value species.

Response #T007

The Forest Service is responsible for managing all of the suitable forest land, not just those areas where high-value species occur. The economic analysis done prior to a timber sale evaluates a particular set of stands rather than individual trees. Except in high-elevation true fir stands, these stands normally contain trees of several species.

Low value species on the Tahoe are considered to be true fir, lodgepole pine, and mountain hemlock. In order to manage stands for vigor and disease and insect resistance, all species must be treated. To leave either low-value or high-value species could diminish wood supplies and would be considered unsound forestry and long-term economics.

Topic #T008

Timber purchasers should not be restricted to a specified amount of timber harvest volume.

Response #T008

The Forest Service sells timber in compliance with sustained-yield principles. Sale volumes are programmed so that these principles are not exceeded during any ten year period.

Individual timber sale contracts specify an estimated volume of timber to be cut based on a Forest Service

cruise of included timber. All included timber is designated to be cut, either as individual trees or as units. Purchasers are restricted to cutting only that timber which has been designated by the Forest Service. These controls are standard procedures for timber sale contracts and are essential for sound forest resource management.

Topic #T009

There is little economic justification for cutting old-growth timber.

Response #T009

The economics of harvesting old-growth timber are generally more favorable than that for second-growth because of higher volumes per acre and higher values based on wood quality. All old growth within the Forest will not disappear. Some areas on the Forest (e.g., Wilderness, special interest areas, research natural areas, Wild and Scenic corridors, and spotted owl habitat areas) will be managed in ways that will maintain the old growth.

Topic #T010

The environmental effects of the proposed silvicultural systems were not sufficiently addressed.

Response #T010

We disagree. Appendix L, together with Chapter 4 of the DEIS, describe the environmental consequences of proposed silvicultural systems.

Topic #T011

The Forest Service should set a good management example for private landowners.

Response #T011

We agree. Management on private forest lands is regulated by the State Forest Practices Act administered by the California Department of Forestry.

Topic #T012

The Proposed Forest Plan does not provide for adequate dispersion of harvest units.

Response #T012

All alternatives, including the Preferred Alternative, conform to the National Forest Management Act standards for dispersion of harvest units. Standard and Guide on Dispersion provides direction to separate harvest units when their aggregate area exceeds 40 acres. See S&G #41 and #42.

Topic #T013

The opportunity exists under all alternatives, contrary to the statement on pg 242 of the DEIS, to consider departure because all alternatives meet the conditions for improving age and size class distribution

Response #T013

We agree that other alternatives would also improve age and size class distribution, but Alternative K, which does more cutting in the first decade and less in the following decades, achieves a better age and size class distribution than the other alternatives. Since none of the other conditions for departure listed on pg. 2.42 exist on the Tahoe National Forest, one alternative designed to achieve a better age and size class distribution was considered adequate.

Topic #T014

Please clarify Table B.3 (Appendix B pg. 27 of the DEIS) which indicates that the actual cash receipts to the government for aerial logging have been negative in order to prevent the conclusion that the government is subsidizing the timber industry.

Response #T014

We do not mean to suggest that the negative value indicates a willingness to subsidize the timber industry. It is only an indication of what consumers would be willing to pay for forest outputs. We recognize that helicopter logging can provide public benefits with little affect to the natural environment but at high costs per output.

Topic #T015

I would like to have a map showing the location of planned sales and road construction in riparian areas for the next decade.

Response #T015

The Tahoe National Forest prepares a map yearly which shows the locations of planned timber sales for the 5-year planning period. This map is updated yearly as new planning data is developed. Additional maps of the planned sale areas are available at the appropriate District Office as are the projects' environmental analyses conducted in compliance with NEPA

Topic #T016

I do not believe there are zero acres of economically unsuited areas for timber production as shown on table 4.27 of the DEIS.

Response #T016

The process of evaluating available, capable, and suitable timber land removes those lands that are legislatively or administratively unavailable, incapable of producing commercial sawlogs, and not physically suitable for harvest without irreversible damage and reforestation within five years. The figures in the table you refer to only include those acres that have already been classified as available, capable, and suitable (CAS).

For planning purposes, a financial analysis is used to organize CAS lands into economic and value categories. This analysis does not classify land as not suited for timber production. Land that is not selected to meet the objectives of the alternative because of economic efficiency would be classed as not suited for timber production. In Table 4.27 as indicated, all lands available, capable, and suitable were selected to meet the objectives of each alternative analyzed.

Topic #T017

One hundred percent DBH inventories should be conducted on a 10-year cycle within 20% of small management compartments.

Response #T017

We conduct Forestwide inventories every 10-15 years as needed for land management planning using proven statistical methods. Compartment inventories and timber sale cruises are also conducted for individual projects.

Topic #T018

FEIS must discuss and disclose the economic suitability for wood fiber production considering high reforestation costs, steepness of slopes and soils, shift in quality of timber due to short rotations, and the low demand for wood fiber.

Response #T018

The concerns you raised were considered in developing the preferred alternative. Refer to Chapter 3 - Timber Demand, Chapter 3, - Soils and Appendix L. Concerns you raised about providing high quality timber is being looked into. Research is currently on going to address the relationship of silvicultural

practices and resulting wood quality. Through research and monitoring we will be able to answer these questions during future planning efforts.

Topic #T019

The plan fails to meet the intent of 36 CFR 219.1(B)(14), by proposing to manage the TNF for commodity production at a time when the general public clearly desires more amenity benefits.

Response #T019

The Forest has heard from many individuals and groups with special interests in the draft plan. The Forest has made a monumental effort to balance that input and to meet resource needs for all publics.

Topic #T020

The plan must disclose the effects long-term sustained yield has on all forest resources e.g. water quality, visual quality, soil productivity, biological diversity wildlife, habitat, and recreation use.

Response #T020

All subjects above are discussed in the DEIS. Refer to chapter 3 and 4 and the Appendix volume.

Topic #T021

Price trends from an arbitrary selected time period of maximum economic growth the timber prices were used rather than up-to-date data.

Response #T021

Base year for dollar values was issued to the Forest in Pacific Southwest Regions Land Management Planning Direction. The values used were averaged for four years (1979-1882) and expressed in 1982 dollar values. The timber industry went through a recession during that period of time, which resulted in lower timber prices.

Topic #T022

Management prescriptions in the preferred alternative will cause and have caused irreversible damage to the TNF soil, riparian habitat, wildlife and water resources.

Response #T022

The existing situation for the resources listed is described in Chapter 3 of the DEIS. The condition of riparian areas on the TNF is described as generally very good, and water quality quit high, although there are problem areas which need corrective ac-

tion. This has been recognized and identified in this chapter.

TOPIC #T023

Irretrievable productivity losses result from nutrient export, e.g. removal of tree boles and whole tree removal.

Response #T023

Additional standards and guidelines have been adopted in the Final Plan to provide protection of soil productivity. Research is on going at the Biomass and Energy Research Unit at PNW to find our the amount of biomass that can be harvested and the relation between harvest and future productivity. The research is expected to result in equations that allow calculation of the loss of nutrients that will result from any level of harvest, including whole-tree harvesting. As this type of information through research and monitoring becomes available it will be incorporated in to our site specific timber sale planning.

TOPIC #T024

The DEIS must disclose potential long-term effects of intensive timber management on soil productivity.

Response #T024

Your concerns are addressed in Chapters 3 and 4 under soils in the DEIS.

TOPIC #T025

The DEIS failed to address the effects of noise pollution, oil, fuel and chemical spills as a result of the enormous increases in logging levels.

Response #T025

Harvest levels are not increasing. The volume target of the Preferred alternative is 142.3 MMBF versus 173 MMBF under the No Action (current) Alternative. We have no reason to believe there is a 'noise pollution' problem associated with timber harvesting. If timber sale activities include storage of fuel or other hazardous substances, Timber Sale Contract provisions specify special protection measures to prevent spills of hazardous materials. The Forest also has a hazardous substances spill plan which is intended to be used to respond to spills.

Topic #T026

Inadequate funding is presently resulting in failure to comply with requirements to meet TNF goals and

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objectives specified in the 1978 TM Plan for resource protection.

Response #T026

Chapter 1 of the Regional Guide for the Pacific Southwest Region and Final Environmental Impact Statement states, 'Plans and Guides are not developed to conform with annual budgets, but rather are the basis for annual Forest Service budgeting proposals. The rate of implementation depends on the funding and workforce made available to the Forest Service through annual Federal budgeting and a appropriation processes.'

Proposals are frequently changed in the budgeting process. However, 'such adjustments are within the scope of Regional Guides and National Forest Plans.' The actual appropriated budget becomes a firm contract of work for which the Forest Service is held accountable. The TNF intends to comply with those contracts and provide, accordingly for adequate resource protection.

Topic #T027

Recreation opportunities will decline as roadless areas are opened for logging.

Response #T027

The Forest Service manages the National Forest System for a wide range of recreation opportunities including Wilderness, semi-primitive recreation experiences to more developed opportunities. The Forest Service currently provides twice the amount of recreation as the National Parks (measured in Recreation Visitor Days). In addition 82% of all wilderness areas in the the 48 contiguous states in in the National Forests, as are over 50% of the Wild, Scenic, and Recreation Rivers.

The Draft Plan represents an approach that addresses the public's need for both roaded and roadless recreation. Public response to the draft is being considered in the final decision regarding the balance between roaded and roadless recreation and the magnitude of any gap between demand and supply.

Topic #T028

Use helicopter or balloon logging or don't cut."

Response #T028

The TNF has developed policy, standards, and guidelines directing the use of various logging systems. When designing timber sale projects we con-

sider the use of all logging systems, and base our selection on silvicultural needs, environmental protection, feasibility, and costs. See Response T039

Topic #T029

I support the concept of intensive management of hardwoods and conifers on fairly level, low elevation sites. Coppicing may be an alternative.

Response #T029

Management Practices on Hardwood Management, Artificial Stand Reestablishment, Natural Stand Reestablishment, Release and Weeding, and Pre-commercial Thinning in the Forest Plan provide for activities to enhance growth or regeneration, including seeding, planting, thinning and fertilization of both hardwood and conifer stands.

Topic #T030

I support the Citizens Alternative and believe that other alternatives will result in a loss of jobs and the eventual loss of the forest itself.

Response #T030

We analyzed the Citizens Alternative with the assistance of the authors using the same computer models that we used with the Alternatives. We were able to substantially learn from this process. The Record of Decision provides the rationales to which Alternative was chosen.

Topic #T031

I am concerned over the assumption that commercial thinning removes only the natural mortality.

Response #T031

Commercial thinning is the removal of trees from a stand in the form of useful forest products. Currently, useful sawtimber products are produced from trees 10 inches dbh (diameter at breast height) and greater. Trees less than 10 inches dbh are used for firewood.

The purpose of these thinnings is to stimulate growth of the uncut trees and to increase total yields of useable material from the stand. In almost all types of thinning, natural mortality is removed along with additional trees necessary to thin the stand to a desired density. See the Glossary, Appendix "T" for definitions of intermediate thinning, salvage, sanitation cutting, and thinning.

Topic #T032

I support all silvicultural treatments as options now and for future use, to achieve long-range goals. Silvicultural systems utilized in timber management should be appropriate to the Tahoe National Forest, provide a balance of resource outputs, and be applied on a site specific basis.

Response #T032

We agree When all silvicultural systems are available , it allows us as managers to reduce negative environmental affects, to be most cost effective and most flexible and better able to produce the goods and services needed by the American public. See Response #T071.

Topic #T033

More thought should go into selecting a harvest method. Harvesting should be done in a manner which enhances the forest environment without clearcutting. Thought must be given to the effect upon the area surrounding the harvest activity.

Response #T033

For each proposed timber sale project, heavy emphasis and consideration is given to the selection of harvest methods. Certified silviculturists with the advice of other resource specialists work together to determine site specific needs and treatments for each stand Harvest methods under consideration could include shelterwood, selective tree logging, and clearcutting. Each method has its benefits and depending on site conditions, the method that provides the most benefits is chosen. Consideration is given to effects upon other resources and is documented in an environmental analysis conducted in compliance with NEPA.

Topic #T034

I believe the best choice of timber control should be based on past record of erosion, herbicide and reforestation successes and failures.'

Response #T034

We agree Learning to make the proper choice is a dynamic process. The policies, standards, and guidelines outlined in the Forest Plan which pertain to managing the forests natural resources are based on the past successes and failures in the natural resource scientific and management community, These policies, standards and guidelines are applied to each of the management areas on the Forest

Topic #T035

Timber harvest should be conducted with the following guideline. oldest and best individual trees of each species should be left for seed production

Response #T035

Leaving the best individual trees of each species to produce seed is the premise behind the shelterwood and seedtree silvicultural systems. Appendix "L" describes the trade-offs for using either system. The oldest and largest individual trees within a stand do not necessarily represent those individuals which would produce the best seed crop or the best offspring. Other genetic characteristics are considered in selecting seed trees, i.e. , form and disease resistance.

TOPIC #T036

Helicopter logging can cause damage to sensitive soils, streams and wildlife.

Response #T036

The Forest Service believes that helicopter logging is the least damaging harvest system to the environment. But helicopter is usually the most expensive harvest system and is predominately used in sensitive or remote areas of the forest. During the aerial removal of timber by helicopter there is no ground based machinery operating on the site, and logs are usually lifted straight up into the air by the helicopter. This procedure minimizes the potential for damage to soil productivity, streams, or wildlife.

TOPIC #T037

The TNF should develop methods of logging that will enhance recreational potential and increase yearly number of visitors. I feel logging companies are not working toward this.

Response #T037

The Forest designs special cutting methods to enhance visual quality in those areas receiving high recreation use. Special cutting methods might include such things as removing hazard trees from campsites or removing a number of trees for a vista, requiring in the Timber Sale Contract that stumps be cut low, trails be repaired, skid trails be returned to the natural contour, or that logging slash be 100% cleaned up Any timber harvest method meeting the objectives might be used, including clearcutting, shelterwood, group selection and individual tree removal. Timber harvest also provides a system of

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roads which allow the recreationist to use the opportunities in the Tahoe National Forest.

TOPIC #T038

I support California National Forest Plans. Some silvicultural practices are unsightly and can offend private adjacent land owners

Response #T038

We agree that some silvicultural practices can be unsightly. For this reason, we have developed specific standards, guides, and practices that will guide the design and location of timber harvest, in areas of the Forest where scenic quality is identified as a key objective.

Topic #T039

The TNF should demonstrate the trade-offs of different harvest systems, i.e., clearcuts, shelterwood, smaller clearcuts, etc.

Response #T039

Appendix L of the Draft E.I.S. describes the application of various silvicultural systems and the trade-offs of each,

Topic #T040

I believe trees should be harvested when health starts to decline and reaches the peak of maturity.

Response #T040

On the Tahoe National forest trees are harvested under various site specific prescriptions. Prescription objectives could include such measures as thinning for overall stand improvement, sanitation or removal of trees which have met site growth potential, final removal for regenerating new stands, and salvaging diseased and insect infested timber. Stands are in essence managed to meet the overall Forest management objectives and it is those objectives including tree health that determine when trees are harvested. See Response T215.

Topic #T041

It is a good plan: thorough and professional. It should be a model for all the other National Forests, as with any human document, however it can be improved. I urge that you include more rationale to explain your choices of silvicultural methods up front in the plan itself. The EIS and the appendix do in fact cover these points quite well, but having to shift from one document to another causes a loss of connection. I honestly believe it will help forestall

some of the criticism over the choices of even-aged management in those areas where it will be applied.

Response #T041

Explaining our choices of silvicultural methods for managing the vegetation on the Tahoe is very important. We hope to incorporate our explanations in such a way that not only will the public understand us but our field personnel will also.

Topic #T042

Clearcutting versus uneven-aged management and use of herbicides were not given adequate consideration in the plan considering the major public concern.

Response #T042

The Forest has been responsive to these issues in the Final Plan. Refer to the Forest response to the public comments on the DEIS and the Critical Issues identified in the Plan.

Topic #T043

The plan fails to disclose the full negative impacts of logging in Stream-side Management Zones (SMZ's).

Response #T043

The Draft EIS considers water yields and water yields meeting quality standards. The Plan also assumes that the Forest will implement Best Management Practices that are predicted to mitigate most adverse effects to water (see Plan, Appendix E). SMZ (streamside management zone) guidelines are an extension of the Best Management Practices and have been revised and updated to reflect current knowledge of mitigation needs. These new guides are included as Appendix F in the Final Plan.

Topic #T044

Management practices do not adequately protect residual trees and stands from impacts due to clearcutting and overstory removal.

Response #T044

Management practices used on the Forest are thoroughly discussed in Appendix L. In addition, site specific protection of residual trees and stands are considered during preparation of environmental analyses conducted in compliance with NEPA for timber sale projects. If the residual conditions warrant protection, the silvicultural prescription would be designed to identify and protect the residual stocking. Necessary implementation costs would be

included in the appraisal and the necessary contract provisions developed in the timber sale plan and contract to require protection.

TOPIC #T045

The Forest Service is tradition bound to even-aged management which will inevitably eliminate old growth and climax dependent wildlife species.

Response #T045

Much of the remaining old growth timber on the Tahoe National Forest is located within spotted owl habitat areas (SOHA'S). These SOHA'S will be managed to maintain old growth and climax dependent species. In addition to the SOHA'S the Granite Chief Wilderness Area, the Placer Big Trees Grove, all Research Natural Areas, and most streamside and riparian zones will be managed in such a way that will result in maintaining old growth timber.

TOPIC #T046

The Final EIS should include a discussion as to why even-aged management will produce greater timber volume yields over the planning horizon.

Response #T046

The Forest has included a discussion of even-aged management in Appendix L of the Draft EIS. This discussion includes many attributes of the even-aged system, including wood production.

Topic #T047

Even-aged management converts the forest to a single use area which contradicts traditional policy goals of the Forest Service regarding multiple use management.

Response #T047

The Tahoe National Forest is dedicated to the multiple use concept of land management. All of the multiple uses, however, cannot occur on each and every acre of forest land. For this reason the Forest Plan allocates acreage to the use for which it is most appropriate. Appropriate use in some cases is timber production. Even-aged management does not exclude all other uses besides timber. Examples of this are successional wildlife habitat enhancement as well as range value enhancement.

Topic #T048

Too much forest has been allocated to even-aged timber management

Response #T048

In the Final Forest Plan, the acreage allocated to intensive, even-aged management has been reduced. Of the 794,000 acres within the Tahoe National Forest, approximately 233,000 acres are allocated to intensive, even-aged management. Approximately 9,300 acres in five compartments will also be dedicated to the implementation of uneven-aged management. See T051.

Topic #T049

I am opposed to even-aged timber management. It is an unproven silvicultural tool with no long-term studies to prove it works, especially for more than one or two rotations. It produces an increase in insects and disease, a loss of aesthetic values and should be restricted to level, highly productive timber land.

Response #T049

Even-aged management is a proven silvicultural tool that will produce fully stocked, healthy and vigorous stands of timber. For a discussion of even-aged management as the preferred silvicultural system, refer to Appendix "L" of the Draft EIS. See Responses T260 and T057

Topic #T081

The Forest Service should adopt or should be in favor of an ecologically and environmentally sound uneven-aged management plan with only selective cutting.

Response #T081

We will continue to use all silvicultural systems for timber land management including group selection, single-tree selection, clearcutting, shelterwood, seed tree, and intermediate harvest.

Uneven-age management was modeled and considered in detail in the Preferred Alternative and is discussed the Final Environmental Impact Statement. As a result, approximately 12,500 acres will be managed for uneven-aged management. The Practice to be used is E8, uneven-aged cutting method. See practices in Forest Plan.

Timber harvest activities will be guided by forest-wide standards, guidelines, and practices which will be designed to maintain all identified resource values.

Topic #T082

The Forest Service should implement a timely and aggressive salvage program to capture the 14.2 MMBF of annual mortality on the TNF.

Response #T082

The 14.2 MMBF you refer to (Table V.9, Draft Forest Plan) includes 2.1 MMBF of mortality occurring on unsuitable land. The balance of 12.1 MMBF occurring on suitable land is an average based on many years. The actual annual mortality can vary widely from year to year depending on insect activity, fires and other environmental factors. The TNF has and will continue to support an aggressive salvage sale program in balance with wildlife needs. At times when timber mortality is high, the sale of green timber is deferred to put the maximum effort into salvaging dead and dying timber in a timely manner.

Topic #T083

Selective logging would employ more people than clearcutting

Response #T083

The analysis in the final EIS indicated that the Preferred Alternative, which utilizes clearcutting, would employ greater numbers of people than the selective cuning alternative. Timber harvest volumes would be lower under the selective harvest system. The total number of people employed in timber related jobs is more dependent on the total volume of timber harvested than on harvest methods

Topic #T084

The Sardine-Worn and Sunnyside Management Areas should be managed on an all-aged basis.

Response #T084

See response #T081

The Sardine-Worn Management Area will emphasize watershed and wildlife values in streamside management zones and threatened and endangered species habitats, maintain the natural landscape in the Highway 89, I-80 and Reservoir middle grounds, enhance the permanent and transitory range types, and emphasize deer habitat improvement along migration routes. In addition, lands will be managed for timber to produce a mosaic of even-aged timber stands consisting of various age classes, which are interspersed with meadows and grasslands.

The Sunnyside Management Area will emphasize dispersed recreation opportunities by maintaining its scenic and remote character. Special cuning methods will be used to harvest timber for creating a diversity of age classes

Topic #T085

Past cutting practices have removed all the large valuable trees. Selective cutting is no longer a viable economic alternative

Response #T085

On Tahoe National Forest lands, stand conditions are variable. Many large valuable trees have been removed but many of our silvicultural options are still available depending upon the existing stand conditions. In mixed conifer timber stands where the pine species have been removed (leaving the fir), using selection cutting practices, it is sometimes very difficult or impossible to naturally regenerate a species composition containing the more valued (shade intolerant, pine) species. Some stands just don't have the needed seed source and the single-tree selection cuning method applied here would only encourage natural regeneration of the lower valued shade tolerant species. Under these circumstances, the objective should be to artificially regenerate the stand using group selection or clearcutting methods. If the stand is well stocked with younger trees of the desired species and seed source, single-tree selection cutting could prove to be a viable alternative after the stand has grown to a size of seed bearing age and would allow commercial stand treatment

Topic #T086

Opposed to very short rotations. Prefers special cutting or long rotations.

Response #T086

In the Final Plan, volumes and acreages will be scheduled for harvest using a range of rotation ages determined feasible for specific growing sites and suitable for meeting identified socio-economic and resource objectives. In areas intensively managed for timber production, the rotation ages will usually range between 50-120 years for mixed conifers, 70-200 years for red fir and 80-110 for eastside pine.

Topic #T087

Select cutting should be used on non-steep/non-fragile slopes spread over many decades

Response #T087

Timber harvest will be considered on all those lands considered available, capable, and suitable for timber harvest (see Appendix K) on a site specific basis in accordance with the resource management emphasis and standards and guidelines of that management area.

The Forest is planning for more uneven-aged management in the Final EIS See Response T028.

Topic #T088

The Forest Service should award more contracts to purchasers that practice selective cutting.

Response #T088

The Forest Service specifies which harvest method will be used for each harvest unit at the time the site specific silvicultural prescription is developed. These harvest prescriptions are then incorporated into the timber sale contract as performance requirements which the purchaser of the timber must agree to do in the harvesting operation.

Topic #T089

Selective cutting eliminates the need for spraying, maintains scenic and recreation values, and does not destroy wildlife habitat.

Response #T089

Selective cutting may not eliminate the need for herbicides. Whenever there is a harvest operation, and the forest floor is opened to sunlight, competitive vegetation will germinate and sprout. When this happens controlling the competing vegetation may be desirable.

Also, the Forest believes that scenic and recreational values, and wildlife habitat can be maintained and enhanced with a mix of even-aged and uneven-aged management systems. Forestwide standards and guidelines, and practices will also provide additional protection to amenify values.

Topic #T090

Feels selective cutting would be less detrimental in the Grouse Lake area

Response #T090

The Grouse Management Area #041 is designated as a nonmotorized dispersed recreation area. This 79,647 acre area is unsuited for scheduled timber

harvest. Timber harvest would only be permitted for insect and disease control, removal of fire damaged trees and removal of hazard trees. The management emphasis for the area is on wildlife and visual quality and dispersed recreation.

Topic #T091

Give uneven-aged management the same analysis as even-aged management

Response #T091

The TNF has given uneven-aged and even-aged timber management full consideration and analysis in the Final EIS.

Topic #T092

Selective timber harvest costs more but is well worth the preservation of our resources, costing less in the long run

Response #T092

In the final EIS, the TNF is utilizing a mix of even-aged and uneven-aged management

Uneven-aged and even-aged management both have advantages. Table 2 of Appendix L shows the ratings of the major silvicultural systems by key attributes

Uneven-aged management costs more to prepare and to harvest areas due to labor intensive marking, individual tree protection and increased fuel treatment on more acres with less volume production. Non-timber resources such as soil could be more heavily impacted due to increased road building and recurrent skid trail development. Therefore, not only do financial costs tend to be greater on a volume basis for selective systems, but negative impacts on other resources may also be greater. Forest is investigating every opportunity for implementing some type of uneven-aged management, but it will probably be done in stages in order to learn as we go.

Topic #T093

Give an explanation of the rationale for recommending even-aged and uneven-aged management as they are applied in the Plan.

Response #T093

In Appendix L (Silvicultural Systems and Their Application) of the FEIS gives the rationale of even-aged and uneven-aged management.

Topic #T094

The Tahoe National Forest often consists of conifers which grow naturally in uneven-aged forests. The DEIS and Plan do not consider or discuss the effects of clearcutting on this growth pattern and the replanting of the uneven-aged stand with even-aged stands

Response #T094

In the Draft Environmental Impact Statement and Proposed Plan, uneven-aged management was not considered and analyzed because it was not a major component of any of the Draft Alternatives. The TNF has analyzed different levels of uneven-aged management in the Final EIS. The effects of even-aged and uneven-aged management are also covered. All harvest methods consider protecting and managing aggregations of healthy, vigorous conifers and prescribe planting on areas void of vigorous trees

Topic #T095

The amount of clearcutting under Alternative I has been overstated. A better combination of group selection and clearcutting should be presented in the final plan that will result in a harvest of 225 MMBF.

Response #T095

The TNF will continue to use all silvicultural systems available. The selected alternative in the Final EIS will have a mix of even-aged and uneven-aged management that will best manage the resources.

Topic #T096

Selective cutting would attract more tourist dollars through the use of the forest for hiking, sightseeing and natural habitat for endangered flora and fauna.

Response #T096

See Response #T089.

Topic #T097

Logging creates visual scars and adversely affects nature trails and wildlife. Selective logging should not be allowed in areas close to trails.

Response #T097

See Responses #W022 and #R154. Timber harvesting activities on the TNF are planned using the Forest Standards, Guidelines, and Practices which are designed to minimize impacts to visual quality, trails and wildlife where those objectives are identified.

Topic #T098

The Citizens Alternative should be reviewed carefully. There is adequate scientific evidence presented in Appendix Land elsewhere to justify rejecting the Alternative on the merits of the uneven-aged management regime.

Response #T098

The Citizens Alternative (NMK) has been carefully reviewed and analyzed in the Final EIS. Refer to the Record of Decision for the rationale for the choice of alternative. See Response #T030

Topic #T099

Appendix L presents an excellent discussion of silvicultural methods, and when read objectively, presents a complete rationale for the decisions which have been made or will be made regarding selection of silvicultural systems.

Response #T099

Thank you for taking the time to comment.

Topic #T100

Define high forest cover as shown in the Glossary under uneven-aged management.

Response #T100

The phrase 'high forest cover' refers to the amount of the forested land being covered with a mosaic arrangement of groups or multi-aged stands some of which would have attained considerable height

Topic #T101

The discussion of mortality for alternatives A, C, and K (DEIS, pg. 4.33) seems to say that mortality would be both greater and less. Clarification is needed.

Response #T101

The DEIS states "tree mortality and growth loss would be greater than under the preceding alternatives (Alternatives I, D, and B) because of the increase in acres unsuited for timber production. Losses would generally be less than the current situation because most of the current roadless areas would be managed with prescriptions scheduling timber harvesting on a regulated basis"

'Tree mortality and growth loss' reflects on the our ability to salvage this dead material before it becomes useless through decay. The wood in a dying tree (depending on the climate and species of tree)

will deteriorate into unuseable wood in one to two years So, the timeliness of harvest and manufacture is very important for making a useful product out of a dead tree

The next phrase, 'would be greater than under the preceding alternatives because of the increase in acres unsuited for timber production,' is comparing the number of unsuited acres between the group of alternatives A, C, and K with the group I, D, and B. This is saying that because the first group mentioned has more acres of unsuitable land, it will lose more salvageable wood than that for the second group of alternatives.

The key to this is understanding what 'unsuited' means and how it would affect the amount of mortality and growth loss that would occur because the dead material was not salvaged and used before it deteriorated

Land suitability determines where the forest will devote its efforts to manage timber lands. Lands determined to be suitable for timber production are forested lands capable of growing wood and it is feasible to schedule removal and replacement of trees here without irreversible damage to other resources. Unsuited lands may be able to grow trees but it may be impossible to replant or to remove them without irreversible damage to other resources such as soils, scenic quality or water etc

Once a piece of land is classed as unsuitable for timber production it essentially receives less emphasis for timber management for that planning period (10-15 years) If mortality does occur, it may not be salvaged. In essence, trees not salvaged are lost. With some exceptions, the more unsuitable acres an alternative has, the higher the volume of mortality that might be foregone.

The second sentence focuses on the fact that the 'current situation' (alternative G) has large areas without roads. Roads are necessary to efficiently salvage mortality. This Alternative therefore inherently has many more acres that could not be salvaged as compared to Alternatives A, C, and K. Consequently, Alternatives A, C, & K should yield more salvage than the 'current situation':

Topic #T1 11

Timber should no longer be harvested from the Tahoe National Forest.

Response #T111

Wood is an important renewable natural resource. We all use it in hundreds of many different products. It is one of the few building materials that is renewable. Based on this, Congress has consistently required the National Forests to produce harvest timber for National needs. The following laws provide for the offering of timber products from the National Forests to the public sector: the Organic Act of 1897, the Multiple-Use Sustained Yield Act of 1960, the Forest and Rangeland Renewable Resources Planning Act of 1974, and the National Forest Management Act of 1976

Topic #T1 12

Timber harvesting should be allowed, but it should not be indiscriminate, or uncontrolled.

Response #T112

We agree. In fact, all timber harvesting activities must follow directions which are found in the Forest Service Manual (FSM) and they are accomplished as budgeted by Congress. The Final Plan will identify those areas which are suitable, capable, and available for timber harvesting along with appropriate standards, guidelines, and practices to mitigate impacts. When a specific area is recommended for timber harvest, an environmental analysis conducted in compliance with NEPA will be prepared by an interdisciplinary team looking at a variety of resource opportunities and impacts. Alternatives, are developed and a decision is made based on many factors including environmental effects, costs, and other factors. A timber sale contract and sale area improvement plan are also developed to carry through the harvest and environmental protection measures.

Topic #T113

The Forest Service should seek and encourage innovative harvesting systems and techniques, including helicopter logging, which will have less detrimental effect on the environment.

Response #T1 13

The Forest Service continues to be receptive to improvements or updates in timber harvesting technology. It has also developed some harvesting innovations at its own research facilities. In each harvesting contract, the Forest Service requires those harvesting techniques which are available and which are known to be able to accomplish the desired environmental results at the least cost. The helicopter and the horse are both considered to be viable harvesting techniques. And it is recognized that each technique has its own capabilities and limitations.

Topic #TI 14

Paragraph d. on page C.9 of the Appendix Volume for the Proposed Tahoe National Forest Land and Resource Management Plan and Draft Environmental Impact Statement is self contradictory.

Response #T114

According to this paragraph, Alternative C would schedule no timber harvest in the Sugar Pine Point area. For alternative D, scheduled timber harvest would be planned for this area constrained only by its physical features (steep terrain etc. are usually assumed), scenic quality, and recreation values. Alternatives S, H, and I would schedule **harvest** for Sugar Pine Point constrained only by its natural terrain features and accessibility.

Topic #T115

The Forest Service should not harvest timber on areas heavily used by municipal, scout, and Y camps.

Response #Ti 15

Where recreational camping is the demonstrated and recognized primary use of an area, timber harvesting is not conducted except to accomplish recreational objectives such as removal of any trees that could become a safety hazard. When timber **harvesting** is planned for a general forest area, an interdisciplinary team review is conducted as directed by the National Forest Management Act. During this review, recreational needs are identified along with their associated mitigation measures. These mitigation measures are then written into the timber sale contract for implementation

Topic #Ti 16

A reduction in the Allowable Sale Quantity (ASQ) is opposed because of the associated reduction in timber industry employment.

Response #T116

The affects of the Forest Plan on employment have been analyzed. We are concerned about any impacts that managing the Forest may have on local communities.

The Multiple-Use Sustained Yield Act of 1960 and the National Forest Management Act of 1976 directs the Forest Service to manage National Forest Lands for the sustained yields of forest products while still considering the other multiple-use resource values and the public concerns for them. The public con-

cern for other resource and amenity outputs such as the spotted owl, streamside management zones, and scenic quality have definitely been heard and this may reduce the Allowable Sale Quantity in the Final Plan to below the ASQ discussed in the Draft plan. The Tahoe National Forest is committed through analysis in the land management planning process to developing a Plan that reflects a proper balance between producing much needed commodity outputs (timber & range) and maintaining resource-amenity values such as scenic quality, wildlife habitat and watersheds

Topic #T117

The recreational areas around Sugar Pine proposed for selection Cutting should be reallocated to intensive timber management.

Response #TI 17

The special cutting prescription is appropriate for maintaining a sustained yield of multiple-uses in this area. It should be noted that the special cutting prescription is not confined to 'salvage logging'.

Topic #TI 18

How can management prescriptions 13, 14, and 15 (Appendix, pg. B.15), which includes FORPLAN prescriptions TM-UNS/MINLVL, TM-RED/(INTENSITY), and TM-FUL/(INTENSITY) be considered similar and compatible. (See DEIS, pg. 2.32, "Management Prescriptions and Management Areas").

Response #TI 18

All of the FORPLAN prescriptions mentioned above are similar in that they all relate to timber management. They do differ in their application of timber management but they can be made compatible by just how they are arranged or applied on the landscape.

Topic #T119

Why are lands which are prescribed for streamside management zones (SMZ's) and 'exchange availability' categorized as unsuited for timber production?

Response #TI 19

Lands prescribed for SMZ's are not categorized as unsuited for timber production. However, the harvest is modified to protect the water resource. Land adjustment 'exchange' acreage is considered unsuited because logging would reduce the value of the exchange base.

of trees per acre necessary and of the desired species.

Topic #T120

In the discussion of alternatives, short rotations are characterized as being 50-120 years - (DEIS pg. 2.51, 2.45, and others). Page 477 refers to short rotations as being 50-90 years. This discrepancy should be reconciled.

Response #T120

The TNF definition of 'short rotation' is 50 to 90 years. Appropriate changes were made in the final documents.

Topic #T121

An intensive reforestation program should be maintained.

Response #T121

Most harvested areas are reforested 1-2 years after harvest. Regulations from the National Forest Management Act of 1976 require that the Forest Service provide reasonable assurance that harvested lands be restocked within five years after final harvest.

For the first decade under the Forest Plan, approximately 3,727 acres would be scheduled annually for reforestation. Stocking required to meet certification standards will vary based on site conditions.

Topic #T122

Concern was expressed over the need for timely and successful reforestation. Generally, the comments indicated the Forest Service was currently doing a poor job (i.e., in meeting legal requirements and backlog reforestation targets, and not avoiding further environmental impacts).

Response #T122

Reforestation backlog needs have been eliminated. See DEIS, pg. 369. Presently, the TNF reforestation program is being implemented under the regulations of the National Forest Management Act of 1976 as stated in Response #T122. The Forest Service has over 50 years of experience in reforesting harvested sites and has been very successful in reforesting sites with ponderosa pine and Douglas fir. Our experience with artificial regeneration of the true fir species has not been as successful and that is why we depend more on natural regeneration measures for these species. For most sites that have been harvested, we have been able to reforest harvested sites with well above the minimum numbers

To mitigate environmental impacts associated with site preparation needs and to facilitate successful reforestation, Forest Plan guidelines, standards, and practices will be used. This requires that a full range of alternatives be analyzed on a site-specific basis. Selection of treatment methods will be based on environmental effects, treatment efficacy, and costs. The Forest Service conducts survival/stocking inventories, documents planting site reforestation status through silvicultural and management attainment reports, and maintains stand history on stand activity record cards. See Response T123.

TOPIC #T123

There is a concern for the care and maintenance of young trees. The Forest Service needs to carefully plan, monitor, and document reforestation activities to ensure success.

Response #T123

Reforestation success is monitored through statistical on-ground inventories. The inventories are performed following the first and third seasons after planting has occurred and are maintained until the site is fully certified as established. Certification standards can vary by site and are determined through Forest Service manual direction. Documentation of reforestation status is maintained yearly through the silvicultural and management attainment reports and stand activity record cards. See Forest Plan, Chapter VI, Monitoring and Evaluation Requirements.

Topic #T124

Concern was expressed about available funds for reforestation. Various comments included

"Is enough money allocated to planting?"

"Reforestation problems stem from insufficient funds."

"Fees currently paid by lumber companies are enough to cover reforestation costs."

Response #T124

The Forest Service is required by law (Knutson Vandenberg Act) to advertise timber at rates that are not less than those necessary to reforest the stands that are cut. Therefore, the cost of reforestation is included in the price paid by the timber purchaser. The Forest Service may also request funds, for replanting to ensure success which are appropriated by Congress.

Topic #T125

Harvesting and reforestation help maintain a healthy forest environment.

Response #T125

We agree.

Topic #T126

Reforestation should maintain species diversity. This helps to reduce monoculture problems and to retain values of a natural forest.

Response #T126

Current policy for the Forest Service requires that restocking of deforested sites be accomplished with a variety of species which would naturally occur on the sites. The determination of species to be planted is derived through the analysis of conditions (elevation, exposure, moisture regime, existing vegetation type, etc.) which are specific to the planting sites. In addition, a variety of other brush species and herbs naturally sprout, which does contribute to Forest diversity.

Topic #T127

Harvest methods should result in natural not artificial regeneration.

Response #T127

The Forest Service is required by law (National Forest Management Act) to restock deforested areas within five years after final harvest. Natural seed production from stands happens once in every three to five years depending on the species of tree and local environmental conditions. Inhibiting vegetation (vegetation that competes with young seedlings for available moisture and soil nutrients) starts growing on disturbed sites almost immediately and can envelop a growing site within two to three years. These three facts among a number of others are key in the silviculturist's mind in deciding what kind of regeneration system he or she will use. Artificial regeneration uses seedlings from nursery stock grown from seeds collected at a similar location, elevation, and forest types. Where we have difficulty in artificially regenerating a certain species we tend to rely on natural means. But the time clock is always ticking and therefore, we are usually required to supplement natural regeneration with artificial means in order to meet the letter of the law and to establish seedlings ahead of the undesired vegetation.

On those sites where the success of artificial regeneration of the desired species is consistent, we tend to use artificial methods. This allows us to control the growing site with the desired species density in the shortest period of time and thus allows us to meet the objectives stated above.

Topic #T128

The Forest Service should concentrate timber harvest into tree farms to meet future demand for wood fiber. (use intensive management on small areas of the forest).

Response #T128

Timber harvest will be considered on all lands identified as available, capable, and suitable for timber production. For those very productive lands, timber management will be intensified. See Appendix K. This would be done on a site-specific basis following management area direction and Forest Plan guidelines, standards, and practices.

Topic #T129

Plantations lead to a decline in productivity and timber suitable only for chip and pulp production

Response #T129

The plantations on the Tahoe National Forest given the needed investments should exceed the production of natural stands on similar sites. Investments will be needed however for thinning and for managing the inhibiting vegetation that affects the growth of the trees.

Productivity is very dependent on the condition of the soils. We are very interested in monitoring the performance of plantations for indicators of soil conditions and it has been very intensively involved in establishing standards, guides, and practices that will maintain the productivity of our forests.

The quality of the wood grown in our plantations appears to be of comparable quality to the second growth timber now being harvested in this State. We have no reason to believe this will change.

TOPIC #T130

Plantations require expensive and harmful chemicals.

Response #T130

All feasible alternatives including herbicides are considered for the reforestation of harvested areas. The criteria for the selection of an alternative in-

cludes such things as method effectiveness, effect on the environment, and cost. The method selected and implementation, monitoring, and evaluation procedures are documented in a silvicultural prescription by a certified silviculturist. Selection would be done on a site-specific, project-level basis. See Forest Plan Guidelines concerning integrated pest management.

Topic #T131

Plantations of one or two conifers would turn the forest into a desert for wildlife

Response #T131

Site-specific reforestation prescriptions are prepared and implemented based on the results of biological, economical, and social analysis performed while developing project alternatives. Following site disturbances, natural succession will result in the re-establishment of many preferred cover and browse species which will complement conifer re-stocking in the rehabilitation of sites to meet multi-resource objectives. Also see Response T126.

Topic #T132

I approve of reforesting clearcuts with uniform coniferous vegetation of uniform age for well-managed growth.

Response #T132

See Responses T126 and T127

Topic #133

Put former loggers to work replanting clearcuts. Use local labor to provide jobs.

Response #T133

The majority of tree planting done on the TNF is through contracting under the Federal Acquisition Regulations (FARs). Contracts are awarded based on competitive low bids. Contractors who are awarded planting contracts are responsible for supplying the workforce to accomplish their contractual obligations. The Forest Service has no influence over who contractors hire or where their sources of recruitment are.

Forest Service crews composed of temporary personnel who mainly live in the surrounding local communities are also used for planting. Also see Response T142

Topic #T134

The timber industry demonstrates commitment to replanting. Each year 15 million trees are planted in California by the timber industry. This benefits more than just the present generation.

Response #T134

The timber industry's involvement on National Forest lands is primarily through harvesting timber under Forest Service timber sale contracts. Industry's planting program occurs on private land. Planting on National Forest land is accomplished through contracts or Forest Service force-account crews.

Topic #T135

The Forest Service should increase public awareness of its reforestation program.

Response #T135

Opportunities to share information and management endeavors and to educate the public are being pursued.

Topic #T136

The DEIS discussion on the elimination of reforestation backlog touches on a "rejection for reforestation because of other multiple-use needs (1889 acres)" with no further explanation. This seems to say that land already recognized as timber-producing land has been reclassified as unsuitable and will no longer be considered for reforestation. More explanation is needed.

Response #T136

Tentatively suitable land or lands that have a basic biological capability to produce timber and are suitable for that activity might be classified as appropriate or inappropriate for timber production depending upon the resource objectives for those lands. Each alternative may have the same acre of land classified differently. If reforestation were to meet the resource objectives for each of those alternatives then reforestation would take place. An example might include an acre of land capable and suitable for producing softwood timber but it has been naturally seeded in with hardwoods. One alternative might set the objective of softwood timber production for this acre and would therefore require reforestation into a suitable softwood species. Another alternative might determine that this acre is important for wildlife requiring the existing hardwood species and in this case would require no reforestation. See the Appendix Section on Identification of

Topic #T137

In the DEIS, pg. 2.128, Table 2.20 indicates identical acreage of suitable lands for Alternatives A and K. However, a discrepancy exists in Items 1 and 2 below.

1. In the description of each alternative, the 50 year conversion to young conifer stands differs by 3300 acres (Alternative A. DEIS, pg. 2.45 and Alternative K DEIS, pg. 2.102).
2. Why does Alternative K show current reforestation needs on 6221 acres less than Alternative A in the DEIS, pg. 4.69, Table 4.31?
3. How do these figures relate to the statement found in DEIS, pg. 3.69, paragraph 3?
4. What do 'other project considerations' mean in that same paragraph?

Response #T137

Alternative K differs from A in that it departs from the non-declining even-flow constraint. Accelerated harvest and conversion to young growth stands would take place in the first decade with Alternative K. This would explain the difference in acres between the two alternatives

The 'reforestation needs' figures were developed straight out of the Draft FORPLAN runs with no apparent reason for the differences. The Final FORPLAN will be monitored for any significant differences and reconciled where necessary.

As to how these figures relate to those found on page 3.69 of the DEIS, they definitely do not match. One reason for this may be that the figures on table 4.31 are planning estimates and the numbers on page 3.69 are the result of actual measurements taken from the inventory of actual 'reforestation needs' for a specific period of time.

Considering the last question, 'other project considerations' could include such things as deferring or eliminating reforestation needs to meet other resource objectives (watershed, wildlife etc) or specific project needs including road construction, watershed maintenance etc.

Topic #T138

Timber should not be harvested where there are insufficient funds for regeneration.

Response #138

We agree. The Knutson-Vandenberg Act of June 9, 1930 as amended by the National Forest Management Act of October 22, 1976 authorizes the Forest Service to collect deposits from the harvest of National forest timber to finance the cost of reforestation, timber stand improvement and other activities needed to protect and improve the productivity of renewable resources of timber sale areas. It is the policy of the Forest Service to make a regeneration cutting only when the collection of funds is sufficient to allow the reforestation of the area in accordance with the Forest Plan

Topic #T139

No more logging can occur on sites where past experiences have demonstrated reforestation difficulties and failures.

Response #T139

Refer to Appendix K of the DEIS. Analysis of previous reforestation efforts indicate that when we do an adequate job of site preparation and vegetation management all productive forest land on the TNF can be reforested in accordance with established standards. This is an important enough concern that we require that certified silviculturists develop the stand prescriptions and execute the reforestation plans.

Topic #T140

There is no conclusive scientific proof or assurance that all lands included within the land base for timber production can or will be reforested within five years of cutting.

Response #T140

Refer to Appendix K, reforestation discussion under Test 2. 'Research and experience indicates that the harvest and regeneration practices planned can be expected to result in adequate restocking'

Topic #T350

To meet the intent of 36 CFR 219.14 (a)(3), timber should not be cut where reforestation cannot be assured within five years and timber should not be cut on specific sites, soil types, or exposures where past experience has demonstrated reforestation difficulties. Since TNF is experiencing difficulties in certifying reforestation on some sites, management of similar sites for timber production should not be planned.

sources of recruitment are **Also** see Response T133

Response #T350

The intent of 36 CFR 219.14 (a)(3) is met if in the design of harvest prescriptions, existing, proven silvicultural practices are incorporated that will 'reasonably assure. reforestation within five years after harvest. 'Research and experience shall be the basis for determining whether the harvest and regeneration practices planned can be expected to result in adequate restocking'

Generally, for TNF plantations five years and older, harvest and reforestation was planned and contracted during a time when most proven reforestation tools were reasonably available and were used in plans to assure certifiable reforestation. More recent harvest prescriptions have been affected by restrictions on the use of herbicides imposed in the Pacific Southwest Region. Those prescriptions requiring the use of herbicides for assuring reforestation have been deferred until such time as other proven measures or herbicides become available. For this reason, the TNF meets the intent of 36 CFR 219 14(a)(3) by planning harvest prescriptions using available and proven reforestation practices that will 'reasonably assure' reforestation within five years after harvest.

Topic #T141

Comments were received supporting a thinning and release program.

Response #T141

We appreciate the support for the proposed thinning and release programs presented in the Forest Plan. Such programs will be pursued based on funding and available acreage.

Topic #T142

Manual and mechanical methods of site preparation and release should be used in order to utilize the local work force and provide local employment.

Response #T142

Site preparation and release are accomplished primarily by two means. Forest Service crews and contracts to private operators. With Forest crews, the Forest Service uses its own personnel (both permanent and temporary workforce) to accomplish the work

When contracting is used, the local work force has an opportunity to bid as do all operators, both local and non-local. Contracts are awarded based on competitive low bids The Forest Service has no influence over who contractors hire or where their

Topic #T143

The thinning (and replanting) of fire-devastated areas should supply needed timber

Response #T143

The TNF is responsible for the management of the entire forest. Fire-devastated areas are only one of the many naturally occurring situations which could prompt the Forest Service to propose harvest activities.

Topic #T144

What types of fertilizer are being used, what is their viability for intended purposes, and what are the impacts on biota?

Response #T144

We are currently researching the use of fertilizer applied to test plots established throughout the forest. We are not currently using fertilizer on a regular basis

TOPIC #T145

Analysis of long-term impacts of site preparation practices are needed.

Response #T145

We agree Monitoring and evaluation requirements are incorporated in the Forest Plan, Chapter VI.

TOPIC #T146

Concerning timber stand improvement evaluations, the 10% variability must be within working groups to account for variability of species.

Response #T146

We agree. The standards used for evaluating timber stand improvement projects should be developed for each operational timber or vegetation type,

Topic #T148

No alternative places high budgetary manpower priority on massive thinning programs to reduce the risk of catastrophic wildfire and restore natural ecology of the region.

Response #T148

This was not identified as a major issue during scoping. Review Appendix A for how major issues were

Timber, General
identified Review Chapter of the EIS for discussion
of how alternatives were developed

Topic #T151

The Forest Service should manage the National Forest to maintain sustained yield as long as the environment is protected.

Response #T151

This statement reiterates the goal of the Forest Plan to maintain or increase the optimum yield of forest products while maintaining or improving other resource values.

Topic #T152

The statistics used to project sustained yield under the various alternatives are inaccurate. Long term yield would depend upon a projection of future growth which may or may not materialize due to soil degradation, pests, disease, and herbicide availability. Ultimately, the Forest Service will end up cutting more than it will grow.

Response #T152

We believe that the data used in the final Plan to project sustained yield, along with the assumptions on growth, are statistically sound and that projected timber yields from existing and regenerated stands are reasonable.

Because long-term yield is a 'projection', the Forest Plan was designed as a dynamic document that will be subject to review and adjustment every 10 to 15 years. Periodic monitoring and evaluation of the Forest Plan will provide for timely adjustments and necessary revisions. When changes occur, their significance will be assessed and appropriate amendments will be made.

Topic #T153

The Draft Plan does not reflect the future reduction in the "quality" (grade) of wood and amount of structural timber as opposed to wood fiber products.

Response #T153

The Forest recognizes that the size and the corresponding grade of the average log harvested will generally decrease with time. However, land under long rotation management should provide a source of higher grade material.

Topic #T154

The TNF should develop a 50 year sustained yield plan to ensure old growth retention.

Response #T154

Forest policy is to maintain at least 5% of each vegetative type in the overmature state while ensuring long term sustained yield through the end of the planning period. In addition, TNF's future old growth inventory includes areas managed with a visual quality emphasis, streamside management zones, and lands dedicated to spotted owl habitat. Old growth should always be preserved from man's activities in the Granite Chief Wilderness and in dedicated research natural areas.

Topic #T155

The Citizens Alternative will maintain a sustained yield better than the Preferred Alternative

Alternative I will best accommodate a sustained yield on the TNF.

Response #T155

The Forest Service has spent considerable time analyzing the biological and physical resource base on the Tahoe National Forest and has studied the public's concerns focused on that land. It has studied numerous alternatives for the management of this Forest. Two distinct alternatives, one from the Citizens group and another from the Industry were given in depth study. Open dialogue was established to learn from these and other groups. With this analysis, the Tahoe National Forest has developed a preferred alternative which incorporates many of the items learned. With this analysis, the proposed Preferred Alternative and the associated allowable sale quantity represents a good balance between the raw material needs of the nation and other resource and amenity needs and uses of the Forest.

Topic #T156

The TNF should create a sustained-yield management unit in the Loyaiton and Camptonville areas.

Response #T156

The Forest Plan does not propose to create specific sustained-yield management units in these areas. Sustained yield for the Tahoe National Forest as stated in the Final Plan will support the needs of local industry

costs, the Draft *EIS* does compare alternatives by allowable sale quantity and income for the first decade. A constraint analysis is also presented in terms of present net value. This can be found in Chapter *II* under the Comparison of Alternatives section in the Draft *EIS*.

Topic #T157

There is more timber available for harvesting in California now than there was 100 years ago thus proving timber is a 'renewable' resource that can be managed for sustained yield effectively.

Response #T157

Timber is a 'renewable' resource. Through the process of managing stands by site-specific harvest systems, the Forest will be managed for continuous production, while still providing for other forest uses. However, the conversion of underproductive stands to fully stocked stands in many of California's forests has just begun and will take many decades to achieve.

Topic #T158

To check the rough productivity of each alternative, I divided the LTSY (4.83-DEIS) by the forest lands suited for timber production (4.78-DEE) to obtain BF/AC/YR of growth. These ranged from a low of 246.9 BF/AC/YR to 478.6 BF/AC/YR as follows: (letters are alternatives & numbers are BF/AC/YR) A - 390.9; B - 400.1; C - 403.3; D - 419.2; E - 246.9; F - 283.2; G - 299.8; H - 478.6; I - 439.4; J - 416.7; K - 390.9. To compare this productivity to another measure of productive potential, I used the LTSY from the MMR benchmark and the timber suitable acres (2.13 DEIS) to develop relative productivity of 454.9 BF/AC/YR. This raises a question of why alternative H has higher growth than alternative I (maximum timber)? I assume it is because of acreage decreases for other values & concentration of timber management on only the most productive land. What happened to the less productive land? Is it being managed on long rotation or what? Another question this raises is while Alt. H produces 105% of the MMR potential growth, Alt. A meets only 86% of this potential. We must assume this 14% loss results from management constraints placed on suitable land by other resource concerns. This loss of growth potential should be displayed as an opportunity cost of those constraints, and the actual hard dollars lost due to not being able to utilize this growth in the future should be developed.

Response #T158

Alternative H does have a higher growth per acre for the reason you stated. Timber management for this alternative has been concentrated on the most productive lands (lands producing 85 or more cubic feet per acre). The less productive commercial forest lands would emphasize forage production. In regards to your comment on displaying opportunity

Topic #T159

The allowable sale quantity should be the average amount of timber actually harvested from 1974-84 (102 MMBF). Also, the programmed sale quantity should not exceed 50 MMBF until backlog of sold but uncut timber is reduced to 1 or 2 years.

Response #T159

The allowable sale quantity (ASQ) is dependent on the current and potential productive capacity of the land, the allocation of that land for various mixes of response outputs, and the intensity of timber management practices. Employment and revenue considerations, as well as the demand for other resources, are important in determining the planned mix of amenity and market outputs. The TNF feels the ASQ in the preferred alternative accomplishes this through a combination of even and uneven-aged management, special cutting practices, streamside management zones, wildlife habitat retention, and mitigation efforts for visual quality objectives.

The Forest Service makes every attempt to maintain a balanced timber sale program. However, the forest has less control over how much timber is actually harvested annually. Annual harvest schedules during the life of the timber sale contract are determined by the purchaser of the sale. Typically, purchasers develop their harvest plans based on current and expected demand for lumber products.

Topic #T160

The preferred alternative will never fully regulate the forest because the allowable sale quantity (ASQ) remains below the Long Term Sustained Yield (LTSY) for 16 decades or more. The preferred alternative should instead strive to achieve the LTSY within the first 10 year planning period.

Response #T160

The Draft *EIS* under Predicting Potential Harvest Volumes in Chapter *III* has an explanation for this and it states, 'The NFMA regulations define long-term sustained yield (LTSY) capacity as the highest uniform yield that may be sustained under a specific management intensity on lands being managed for timber production, consistent with multiple use objectives. In relation to a wide range of possible LTSY's,

Timber, General

the existing forest inventory is deficient in both volume and growth. If harvests were scheduled at LTSY capacity, the standing timber on suitable lands plus its growth would be harvested in less than one rotation period. To meet the nondeclining yield policy, the Forest's timber inventory must be meted out until new stands of rotation age are available. Under this concept harvests would have to be below the LTSY capacity until the forest is fully regulated.

FORPLAN runs for the preferred alternative in the DEIS achieved an allowable sale quantity of 90%+ of the LTSY capacity in the 72h decade

Topic #T161

According to Table V.8 in the Draft Plan, the annual productive potential of the Tahoe National Forest can be calculated at 384.5 MMBF. The Preferred Alternative projects an ASQ of 178.7 MMBF or 46% of the productive potential on suitable lands. How is this justified under the 1980 Congressional Policy Statement (P.L. 96-514, 96 Stat. 2957) directing forests be managed to "maximize their net social and economic contributions to the nation's well being...?"

Response #T161

The Tahoe National Forest is regulated by a variety of legislative acts including the Resource Planning Act, the National Forest Management Act, and the National Environmental Policy Act. These Acts direct the Forest Service to manage public lands for the highest net public benefit. Although one objective is to 'maximize economic contributions,' the Forest Service must do so, as further stated in the above Congressional Policy Statement, in an 'environmentally sound manner.' Under the multiple-use concept, and in some cases regardless of the projected long-term sustained yield capacity (LTSYC) of the Forest, all suitable lands cannot be managed for maximum timber production. In the face of a multitude of national, regional and local environmental concerns, a level is eventually reached where increased timber production comes in direct conflict with other multiple use goals. The Forest has chosen the ASQ stated in the preferred alternative because it best accommodates sustained yield goals and other public benefits

Topic #T162

DEIS 4.2L has two interesting statements though. To cite proof that adverse effects of monoculture have not been exhibited on the Tahoe on the basis

of stands which are barely over 30 years of age is not adequate justification for dismissing the consideration. Also, that wider spacing between trees would be necessary for vigor implies that many analysis areas are not capable of maintaining a fully stocked stands. Therefore, these soils and/or sites should be modeled with a constraint to prevent over-prediction of the LTSY

Response #T162

Thirty years is a very short time and that is one reason why the Final Land and Resource Management Plan will be emphasizing the future monitoring of this and similar questions.

On the second point, most sites have an overall potential to produce a finite amount of biomass regardless of the number of plants. Thinning just allows us to focus the site's resources on a fewer number of plants (assuming additional vegetation does not germinate or sprout) thereby allowing the thinned plants to grow larger, faster.

Topic #T163

The LSY in table V.4 is wrong. Table V.9 annual net growth for the future forest should read MMBF instead of 280.3 MMCF. Table V.8 shows that only 15% of capable lands are not in the timber base. Timber production is effectively "locking up" the forest for other resource dev.(?). No balance of resource value is actually shown in the table. Table V.9 shows that rather than being a young forest as stated in the text. The Tahoe is predominately late succession - over 150 years. A line should be drawn in the future forest column at 140 years to show that no trees will pass that point into mature growth. It is very sad to realize that the stands 350 years and older in the future forest column began to grow in 1790.

Response #T163

According to the Draft EIS FORPLAN run tables, the Long-Term Sustained Yield Capacity column in this table are correct. The Allowable Sale Quantity column however, contained incorrect numbers from the twelfth decade on. Thank you very much. The annual net growth figure in Table V.9 is correct. The values for Age class distribution also appear correct and they are displayed to show the present forest condition and what the future forest might look like with the Draft Preferred Alternative. The older stands above the age of 150 years indicated in this table should be present to meet many of the multiple use objectives you refer to.

Topic #T164

The planning documents violate 36 CFR 219.12 (f)(8) by failing to prepare the most cost efficient combination of management options. For example, Alternative H shows that marginally productive lands (thousands of acres of unroaded red fir) can be removed from timber production without any reduction in allowable sale quantity (ASQ)

Response #T164

The regulation you cite states, 'each alternative shall represent to the extent practicable the most cost efficient combination of management prescriptions examined that can meet the objectives established in the alternative. Key to that statement is the requirement to meet established objectives. Chapter 2 provides a complete discussion of each alternative's objectives, outputs, and contribution to present net value (PNV) Review Chapter 3. Timber, Predicting potential harvest volumes for a discussion of the most cost efficient combination of management practices

Alternative H shows that marginally productive lands (lands not capable of growing at least 85 cubic feet per acre per year) can be removed from timber production while still maintaining a relatively high allowable sale quantity. This would require more intensive even-age management practices on the remaining 'prime forest lands' and visual quality would be reduced much below current levels. Much of the red fir land base including that in unroaded areas is considered "prime forest land" capable of growing in excess of 85 cubic feet of wood per acre per year.

Topic #T165

Actual timber cut during the benchmark year of 1982 truly reflects the current level of goods and services provided by the TNF. The No Action alternative should be based on this rather than allowable sale quantity.

Response #T165

CFR 219.76 directs forest plans to formulate alternatives that include determinations of the quantity of timber that may be sold during each decade, allowable sale quantity (ASQ). These quantity determinations are to be based on the principle of sustained yield. Harvest levels during the benchmark year, 1982 were less than normal due to the economic recession. For planning, budgeting and comparative purposes it is more logical to define current level of goods and services in terms of ASQ so that the

Topic #T171

A multiple use plan that maintains the current level of harvest while still protecting the environment will provide enough timber to support the local economy.

Response #T171

See General Response #MOO5.

Topic #T172

The TNF should emphasize maximum timber production in order to meet the demand for timber, provide jobs, support county schools and roads, maximize yield and promptly utilize mortality

Response #T172

We are dedicated to the multiple-use concept of land management. Consequently, all suitable timber land is not managed for maximum timber production. Other uses and values are considered. The Forest Service recognizes that many communities rely on National Forest timber for a significant portion of their economic support. However, the multiple-use concept considers both timber receipts and other public benefits for which revenues are not directly received, such as dispersed recreation. Unfortunately, some benefits are difficult to value in dollar terms. The Forest Service believes the Allowable Sale Quantity presented in the preferred alternative provides the best balance between projected timber demand and other public benefits.

Topic #T173

There should be no increases in wilderness areas due to the corresponding reduction to the timber base

Response #T173

Additional wilderness is not recommended in the Final Plan. See Response #R014.

Topic #T174

The demand for timber does not justify current harvest levels as indicated by the number of buy-outs, extensions, and the backlog of timber under contract.

Response #T174

The basis for a contract extension can have little to do with the current demand for timber. More time to

Timber, General

complete contractual obligations associated with the harvest, such as erosion or slash work, could require an extension. Contracts may also be extended to accomplish unexpected work such as harvesting insect-infested timber. Regardless of the intent, contracts are only extended if purchaser's meet strict requirements as stated in the timber sale contract.

The backlog of timber under contract is a result of what the purchaser chooses to sell each year. Typically, purchasers develop harvest plans based on current and expected market trends. The amount of timber under contract is decreasing, however, as the Forest Service reduces contract lengths and sale area sizes. Most mills usually need from 2 to 3 years contract supply as collateral to support technological improvements.

Topic #T175

The TNF should offer more ponderosa pine and maintain its pine yield through quick rotation plantations.

Response #T175

The silvicultural prescription developed for each specific stand determines the type and amount of species to be harvested. The species of tree selected for reforestation is usually determined by knowledge of the growth requirements of that species and the environmental conditions of the site to be reforested. Ponderosa pine is usually planted on sites it is adapted to but usually in conjunction with other commercial species also adapted the same site. The only time a single species, primarily ponderosa pine, is utilized is when the environment of a particular site is unusually harsh and it is estimated that ponderosa pine will be the only species expected to survive at acceptable stocking levels.

Topic #T176

The TNF should substantially contribute to the Oroville timber industry's need of 50 MMBF per year.

Response #T176

The Forest Service is mandated by federal law to accept the bid of any 'qualified bidder' who submits a responsive bid for national forest timber. Normally, sales are awarded to the highest bidder regardless of where they reside or where they intend to domestically manufacture included timber.

Topic #T177

The allowable cut on the TNF should be reduced to 1.5 MMBF per year

The maximum allowable cut on the TNF should not exceed 10 MMBF per year.

The maximum allowable timber harvest on the TNF should not exceed 125 MMBF per year. No trees less than 100 years of age should be harvested unless they have insects or a disease that threaten more vigorous timber.

I favor limiting the amount of timber cut annually to the 25 year average

Response #T177

The Forest believes that the allowable sale quantity (ASQ) indicated in the preferred alternative provides the best balance considering projected demand, sustained yield capability, and other environmental needs. On the TNF, trees less than 100 years of age are harvested under site-specific prescriptions. Prescription objectives could include thinning for overall stand improvement, regeneration of poorly stocked stands, sanitation or removal of those trees which have mer site growth potential, removal to achieve stand management goals for resources other than timber, and the salvaging of diseased and insect-infested timber.

Topic #T178

There is enough timber located outside of RARE II areas to satisfy the demand for lumber.

Response #T178

The enactment of the California Wilderness Act of 1984 designated 18,705 acres of the Granite Chief Rare II area as wilderness. All other areas that were released for multiple-use management are considered available for timber production along with other uses. In some cases, the use of special cutting prescriptions designed for visual resource management objectives or to enhance other non-commodity values will be implemented in these areas. Adopting comprehensive timber management practices in previous unroaded areas will provide the means to deal with future multiple-use needs. For more on demand, see Appendix on Statewide Timber Supply and Demand.

Topic #T179

Approximately 2.3 billion board feet of timber should be logged in Region 5 each year to meet the demand.

Response #T179

What is harvested outside of the TNF is beyond the scope of the forest Plan. What is proposed within

the TNFs based on projected demand, yield capacity, and environmental concerns.

Topic #T180

The concept of an 'Annual Programmed Sale Quantity' (APSQ) is not contained in the NFMA regulations. These six versions of the allowable sale quantity (ASQ) of the preferred alternative listed in Appendix O (DEIS) should be eliminated and instead one ASQ should be adopted. The Final EIS should include assurance that the ASQ will not be changed unless the environmental and economic effects are evaluated under NEPA.

Response #T180

The six versions of the ASQ in the Preferred Alternative were developed as 'Whatif...?' scenarios. These were used as planning tools and were never considered as alternatives. The preferred alternative in the Final Plan proposes one ASQ.

TOPIC #T181

By 1990, the TNF will have undersold the Preferred Alternative timber target by 220 MMBF. To meet the 10 year yield goal, the annual sale program must average over 200 MMBF.

Response #T181

We are currently operating under the 1979 Timber Management Plan which has an allowable sale quantity (ASQ) of 148 MMBF. We currently have been unable to attain that volume because of additional constraints placed upon the available land base such as spotted owl habitat, unavailability of herbicides, and timberland under existing sale contracts. Under the new Forest Plan, these constraints will continue, making a program above 148 MMBF difficult at best. When the new Forest Plan is implemented, the ASQ will reflect the constraints mentioned and more with herbicides being considered available. If herbicides continue to be unavailable, the ASQ will need to be adjusted accordingly.

Topic #T182

Public land should only be considered 'commercial' timber producing land if it supports a 50-80 cubic feet per acre annual growth rate.

Response #T182

The Code of Federal Regulations and the Resource Planning Act of 1974 requires the Forest Service to consider all public lands as 'forest land' if it is at least 10-percent occupied by forest trees of any size or it formerly had such tree cover and it is not cur-

rently developed for nonforest use. The Land Management Planning Direction for the Pacific Southwest Region further clarifies this direction by instructing the Tahoe National Forest to consider all 'forest land' for suitable timber production land if it contains the biological growth potential of 20 cubic feet or more per acre per year. The systematic process for analyzing Tahoe National Forest System lands can be found in Appendix K of the Draft EIS.

Topic #T183

The annual cut projected in the preferred alternative is reasonable to support the local economy.

Response #T183

The allowable sale quantity will be based on growth and yield information, projected demand, and environmental concerns known at this time. We agree that this ASQ will significantly contribute to the local economy.

Topic #Ti 84

Only 30% of the projected local demand for timber should be harvested from public lands. The rest should come from private lands.

Response #T184

The Forest Service has no jurisdiction over what is harvested on private lands. Timber harvested on private land is regulated by the State of California based on the State Forest Practices Act of 1973, as amended.

TOPIC #T185

The TNF should only harvest each year what it in turn grows each year.

Response #T185

This is the objective of a 'regulated' forest. However, until we can manage stands to a state of continuous production we will not achieve optimum growth or 'regulation'. Currently, the National Forest Management Act requires the Forest Service to successfully reforest an area within five years of timber harvest. Most harvested areas are typically reforested in 1-2 years after harvest. Survival rates for conifer seedlings planted has been averaging about 80 to 85 percent which will obtain expected yields projected in the preferred alternative.

TOPIC #T186

I support the use of the budget system to determine the level of timber harvested.

Timber, General
Response #T1 86

The Forest requests funding each year to prepare, sell, administer the allowable sale quantity (ASQ), to build roads, to reforest, and to conduct timberstand improvement The ASQ is determined by the productive capacity of the suitable and available land base. If adequate funding is unavailable, the ASQ, as presented in the Final Plan, might not be met.

Topic #T187

Where do harvest quotas come from, who sets them, and why are they set when they conflict with non-commercial forest resources?

Response #T187

The amount of timber the Tahoe National Forest offers for sale each year is based on the allowable sale quantity (ASQ) established in the Final Plan The ASQ is established through an analysis of the productive capability of the land and its standing timber inventory, the allocation of that land for various resource outputs, and the demand for other commodity and amenity resource outputs and values. The goal of the Plan is to specify an ASQ that maintains or increases optimum yields of forest products while maintaining or improving other resource values. See Response #T187 for budget effects.

Topic #T188

In the DEIS, pg. 2.35, I don't understand the reference to unregulated timber harvest in the last sentence of Theme 5 or why Item C mentions that timber harvesting will be permitted.

Response #T188

Within Research Natural Areas, timber harvesting would only be permitted for insect and disease control, removal of hazard trees, or for scientific research. There would be no regularly scheduled timber harvest in these areas

Topic #T189

In the Appendix Volume, Appendix C, Page C 8, the 435 acre figure does not coordinate with the figure of 204 acres of suitable productive forest (625 acres minus 421 acres) alluded to in the management area direction on Page V.267 of the Plan.

Response #T189

Appendix C in the Draft EIS refers to 435 acres of commercial forest land The suitability of commercial forest land varies by alternative In the case of Alternative A, as described in the Management Area Direction, 231 acres of the commercial forest land is

designated unsuitable. Together with 190 acres described as non-commercial, they add up to a total of 421 acres of unsuitable productive land.

The Sugar Pine Point MA contains 625 acres of National Forest System lands The total above includes commercial forest lands and, suitable and unsuitable forest lands. Approximately 435 acres (Appendix C.8) of this is commercial forest land. Of this 435 acres, 421 acres is unsuitable productive forest land (Forest Plan pg v.267). So that mean that the remaining acres 204, (625-421) includes 190 acres of non-commercial and 14 acres of productive forest lands.

Topic #T1 90

The Forest Industrial Council claims that the predicted increase in the demand for domestic softwood timber can be provided exclusively from private lands.

Response #T190

Regardless of the above statement, the goal of the land Management Plan is to maintain or increase optimum yields while maintaining other resource values, as required under the Multiple-Use Sustained Yield Act and the National Forest Management Act The TNF is still faced with the task of improving the suitable timber producing land base, land that is not currently stocked, to desired stocking levels. While regional and national market trends indicate an increase in timber prices or "demand: the TNF will continue to develop timber harvest schedules that seek to maximize present net value.

Topic #T191

The Draft Plan does not adequately address the combined effect private and Forest Service timber management practices have on the TNF

Response #T191

Lands adjacent to private land are harvested by the Forest Service provided the harvest activity is compatible with the appropriate standards and guidelines established for that particular management area The estimated cumulative effects of harvesting by both parties is considered in the Forest Service's environmental analysis process as required in the National Environmental Policy Act Harvest activities on private lands adjacent to National Forest lands are based on specific land management objectives set by the landowner. Several of these private landowners own large acreages that are managed primarily for timber production Timber harvested on private land is regulated by the State of California

under the State Forest Practices Act of 1973, as amended.

Topic #T192

There is not enough demonstrated need for the proposed cut and timber should not be subsidized.

Response #T192

Most all timber offered for sale in the Tahoe National Forest is sold. Purchasers of National Forest timber pay for all timber harvested. The Forest Service establishes the minimum acceptable bid rate for all prospective sales, and these are all sold competitively. Purchasers bid according to fair market values of expected final products. Prices bid for TNF timber frequently exceed the Forest Service estimate of fair market value.

Topic #T193

The Forest Service in studying the lands management issue has done less than adequate job in analyzing the social and economic consequences of a drastically reduced annual cut on the Tahoe as well as all of the National Forests in California. The indirect and 'interdependencies' that would be lost due to permanent reduction of the timber harvest levels is far greater than the Forest Service study suggests, in my opinion.

Response #T193

The Tahoe National Forest agrees that the socio-economic analysis of the management situation is very important in developing the Land and Resource Management Plan. The TNF believes that the allowable sale quantity (ASQ) indicated in the preferred alternative provides the proper balance of commodity and amenity resource outputs considering projected demand, sustained yield capability, and other environmental needs.

Topic #T194

Timber sales larger than 1 million board feet should necessitate a public notice of that sale, such as required by the California Forest Practices Act.

Response #T194

The Forest Service in planning sales of this size usually contacts known affected landowners and publics affected or interested in its planning process. With few exceptions, all sales on the TNF are required to be sold under competitive bid and must be advertised in the local newspapers prior to bidding.

Topic #T195

Timber inventory is based on statistically unreliable data.

Response #T195

Appendix J discloses timber inventory statistics and standards obtained.

Topic #T196

Timber revenues will slide as quality and quantity decline. Higher harvest levels and the loss of old growth will cause severe economic problems for the timber industry.

Response #T196

The average age and diameter of trees harvested may decline gradually, following a trend that has developed over a number of decades. Technology currently exists to recover more usable wood from those trees harvested. The timber industry is already adjusting to using smaller logs in their mills.

Topic #T198

The Plan fails to meet the intent of 36 CFR 219.14 (a)(2), for CAS determinations are based on erroneous interpretations of inadequate data. Commentor has observed results of TNF applications of current technology and judges that irreversible erosive soil loss is frequent.

Response #T198

Timber inventory data on which determination of capable and suitable forest land in the Plan is based (See Topic T210) is the accepted methodology for determination of capable and suitable forest lands. Statistical analysis shows that the data is adequate for land allocation purposes.

The comment regarding erroneous interpretation cannot be responded to for there is no indication of what error was made. The commentor indicates he has observed some areas where in his judgement, 'irreversible erosive soil loss' is occurring in managed plantations. Observations as this may or may not be valid. However, if significant, irreversible soil loss is occurring on occasion, this does not constitute evidence that "technology is not available to ensure timber production from the land without irreversible resource damage to soils...". Technology is available, and it is the intent of the Forest Plan that activities proposed will utilize this technology.

limber, General

Since the inventory data is statistically valid, since technology is available and since the TNF fully intends to utilize available technology to insure timber production without causing irreversible resource damage to soils, neither the intent nor the letter of 36 CFR 219.14 (a)(2) are violated by the Forest Plan.

Topic #T199

The Plan fails to meet the intent of 36 CFR 219.14 (a)(2), for soils resource information lacks site specific data for making accurate assessments of land suitability.

Response #T199

36 CFR 219.14 (a)(2) addresses availability of technology to ensure timber production without irreversible damage to soil productivity and watershed. The comment (Topic T199) cites lack of site specificity as a problem in land allocation but does not show how the perceived problem relates to the Regulation. Since there is no apparent relationship between the referenced Regulation and the noted problem, the commentor has not shown how the intent of the Regulation has been violated.

Topic #T200

The DEIS violates 40 CFR 1502.24 by failing to identify methodology and data used for determining CAS lands in 1) high elevation lands, 2) steep, sensitive soils ; 3) low elevation xeric sites.

Response #T200

The response to topic T210 explains how inventory was used to determine capability and suitability of forest lands. Inventory and expansion data are available to show determination of capable and suitable lands.

Since determination of capable and suitable forest lands is a function of actual inventory, and since data and methodology for those determinations are incorporated into the Appendix of the Draft Tahoe National Forest Land Management Plan, 40 CFR 150224 has not been violated

Topic #T201

We need more land to produce timber

Response #T201

The Tahoe National Forest system lands were analyzed in a systematic process described in Appendix K. All acres were first classified as forested land or non-forested land, Those acres classified as forested land then went through an availability analysis.

Forest land which has been legislatively or administratively withdrawn from timber production, such as the Granite Chief Wilderness, is considered not available. Available forest land capable of producing commercial timber products were then analyzed to determine if they met the suitability constraints dictated by the different alternatives. Suitability is based on the ability to meet other resource objectives, ability to meet resource considerations while meeting silvicultural standards and guidelines, and economic efficiency. Based on these criteria, we have determined the maximum acres of suitable land capable of producing timber while meeting the multiple use objectives.

Topic #T202

If poorly stocked stands are brought up to the maximum potential, wood products industry needs will be met along with the needs of other major groups. Less land will have to be harvested annually since acreages are used more productively.

Response #T202

For the Tahoe National Forest, a priority was set to harvest poorly stocked stands for the last 10 years. Several thousand acres of poorly stocked stands have been regenerated and are now stocked to their potential. The Forest Plan changes this priority and emphasizes timber management on much of the most productive lands. By managing the most productive stands less acres should have to be harvested to meet the Allowable Sale Quantity. This is assuming that even-aged management would guide the primary harvest methods. Devoting more acres to more extensive management practices resulting in less yields per acre would require more acres to produce the same volume.

Topic #T203

I am concerned with the Forest plan increasing the acreage devoted to timber harvest from current allocation.

Response #T203

The current acreage suited for timber production is 604,835. This figure refers to acres that timber harvest may occur on, some intensively, some for the management of other resources. The final Plan allocates 536,320 acres for timber production. Timber management will occur on all of these acres in varying degrees. The difference in these two figures reflects a change in land classification system and timber inventory, and different criteria for determining land suitability between the two plans.

Topic #T204

The remaining timber base not designated as wilderness or which has environmental constraints should be managed within wildlife and environmental constraints set by law, but should not be constrained by designations that disregard multiple use.

Response #T204

The Forest Service adheres to environmental constraints set by law and manages the Forest System lands under a multiple-use premise

Topic #T205

The description states that 'There are zero acres of unsuitable productive forest land'. This statement is not accurate. There are extensive areas of talus slopes, intrusive and extrusive volcanic rock hillsides, outcrops, peaks and ridges, and steep rocky slopes covered with chaparral.

Response #T205

The Tahoe National Forest System lands were analyzed in a systematic process described in Appendix K. All acres were first classified as forest land or non-forest land. The areas you speak of would be classified as non-forest land. Barren land comprises 30,910 acres of the Tahoe National Forest. The acres classed as forest land were then considered for classification of available, capable, or suitable.

Topic #T206

It is unrealistic to consider the Berry Management area unsuited for timber harvest in view of the quality of adjacent private lands and resource management areas.

Response #T206

The Berry Management area consists of approximately 1,153 acres of isolated parcels of National Forest land surrounded by private land. The management emphasis for this management area is 'consideration for exchange for other private lands within the Tahoe National Forest. Other uses of these exchange lands will not be considered until all possibilities for exchange have been evaluated. While it is true that these lands are capable for timber production the management emphasis of the area precludes it from timber production. Please see Appendix K for information related to lands capable, available and suitable for timber management.

Topic #T207

There should be an explanation of how and why lands become unsuited for timber production.

Response #T207

An appendix section of the Forest Plan describes the identification of lands tentatively capable, available, and suitable for timber management. Also see Response #T201.

Topic #T208

Lands managed for timber production should be managed for other multiple uses, for example roadless areas.

Response #T208

The objective of the preferred alternative is to manage for multiple-uses. It is recognized that sometimes a use such as timber harvesting will preclude non-motorized recreation uses. This is balanced by providing that opportunity in other areas on the Forest, for example the Granite Chief Wilderness, the American Management Area, and Grouse Lakes Motorized Vehicle Control Area.

Topic #T209

When determining lands physically suitable for timber production the only requirement was that 'technology is available... to assure production... without...irreversible resource damage to soil productivity or watershed condition' (Appendix K.10). This totally insufficient test found that 'no productive land could be classed as unsuited to timber production.'

Response #T209

Refer to Appendix K in the DEIS. Two tests were used to determine physical suitability. Test 1 examines for available technology. In addition, Test 2 determines whether there is reasonable assurance that such lands can be adequately restocked within five years after final harvest. These tests, as described in Appendix K of the DEIS have been verified by actual field observations and they are considered sufficient to determine physical suitability.

Topic #T210

Planners failed to consider soil type and productivity when determining lands capable, available, and suitable for timber management.

Timber, General
Response #T210

The Pacific Southwest Region Land Management Planning Direction (LMP Direction) is a guidance document developed for implementation of the Regional Guide for the Pacific Southwest Region and Final Environmental Impact Statement. Section 4-2 of the LMP Direction guides the Forests towards determination of capable, available and suitable timber lands (CAS) Soil type is not a criterion for placement of lands in these categories.

Forest inventory has determined which timber lands meet the criteria for forested land 'capable of producing crops of industrial wood.' Likewise the inventory is used to determine if forest lands meet suitability standard. Availability is determined when other uses of objectives preclude timber management activities.

Soil type is not a criterion for determining CAS lands. Soil productivity is considered, for determinations are made from actual inventory measurements.

Topic #T222

There has been significant disturbance to fish habitat along Rock Creek due to recent logging.

Response #T222

We agree that logging activities, adjacent to the Rock Creek drainage, along with a combination of environmental events, contributed to disturbance of the tributary. An area above the Rock Creek drainage was logged in the summer of 1985. That winter the western Sierras received the heaviest rainfall ever recorded. As a consequence, extremely heavy runoff from the cutting unit above Rock Creek caused a culvert to plug. Eventually, gravel and other debris made its way to Rock Creek.

The cutting unit above Rock Creek has since been planted and brush species within the unit are sprouting. It is believed that soils are now stabilizing within the unit. The Young Adult Conservation Corps, under the direction of the Forest Service, has selectively cut out log jams, that resulted from the heavy rains, to curtail bank erosion. Monitoring of Rock Creek has shown that fish are currently propagating, thus confirming the stream is suitable habitat.

TOPIC #T223

Logging red fir near meadows will result in degradation of habitat for the Great Grey Owl (*Strix nebulosa*) and possible extinction depending on intensity of logging in each alternative.

Response #T233

See the Standard and Guideline for Endangered, Threatened, and Sensitive Species Management. The habitat requirements of the Great Grey Owl is addressed.

Topic #T231

Logging is a clear threat to maintaining vegetative diversity. The TNF should instead be managed for maximum biotic diversity with harvesting timber a secondary priority.

Response #T231

Logging, if done improperly, can pose a threat to maintaining vegetative diversity. However, with the implementation of the appropriate standards and guidelines under the Forest Plan, we believe that vegetative diversity will be maintained as required under the National Forest Management Act. Site specific indicator species for each major vegetative type and successional stage will guide direction at the project level through the prescription process and will be monitored on a localized basis. See Response #W026.

Topic #T232

Maintaining vegetative diversity ensures retention of the forest gene pool.

Response #T232

We agree. Multiple-use land management under the Preferred Alternative will maintain vegetative diversity throughout the TNF.

Topic #T233

The protection of non-indicator species of plants and animals is just as important as the protection of indicator species when managing the national forest.

Response #T233

We agree. However, we cannot monitor each plant and animal species. In accordance with the National Forest Management Act, the selected indicator species will act as barometers for species having similar habitat needs and will be used to monitor population trends and relationships to habitat changes. These site specific indicators guide decisions at the project level through the prescription process and will be monitored on a localized basis. Occasionally, special mitigation measures may be necessary for those non-indicator species that are identified during the project environmental analysis process conducted in compliance with NEPA that

have a particular significance in a specific management area

least 5% of every major vegetative type in each of 5 to 7 seral stages existing on the Forest

Topic #T234

More information is needed to evaluate Minimum Management Requirements (MMR) for diversity in the Final EIS. Specifically, which types and stages are targeted for retention, how many acres for each are to be retained, and what management techniques will be used?

Response #T234

See Responses #W029, #W038, and #W049

Topic #T235

Diversity distribution should be monitored every 5 years to ensure protection.

Response #T235

The Forest Plan will be monitored periodically to evaluate the effects of the management practices on the forest as required by the National Forest Management Act. Ongoing inventorying and monitoring programs will include vegetative and species distribution. Specific monitoring requirements are shown in Chapter VI.I of the Final Plan.

Topic #T236

To maintain vegetative diversity, all cutting units should be less than 10 acres and separated by uncut units of equal size.

Response #T236

The size and location of cutting units are determined by the silvicultural prescription according to the standards and guidelines for that particular management area. Through a project specific analysis that determines the type and amount of timber to be harvested, vegetative diversity is maintained to appropriate levels. Please see TNF forestwide standards and guidelines for Diversity.

Topic #T237

The Preferred Alternative will best protect vegetative diversity within the TNF.

Alternative E best protects vegetative diversity within the TNF.

Response #T237

We believe the Preferred Alternative will produce a forest of greater diversity than now exists. This will be achieved by creating 10 year age classes in the major forest types and by maintaining over time at

Topic #T238

Timber harvest management practices relating to cultural treatments do not comply with 36 CFR 219.27 (c)(4) because they do not maintain biological diversity required under 36 CFR 219.27 (g).

Response #T238

Cultural treatments may be included in the Forest Plan where they are intended to increase the rate of growth of residual trees, favor commercially valuable tree species or age classes which are most valuable for wildlife, or achieve other multiple-use objectives. 36 CFR 219.27 (g) refers to diversity in terms of management prescriptions, not an individual management practice. Refer to 36 CFR 219.3 - Definitions and Terminology

Topic #T239

Planners can present no data behind the assumption that viable populations of hardwood dependent organisms can be sustained while only maintaining 10% of the hardwood conifer forest

Response #T239

Precise relationships between hardwood stand characteristics and wildlife use are poorly understood. Accordingly, the Forest has elected to pursue the management of hardwoods by: 1) establishing a practice on Hardwood Management, and 2) developing a comprehensive management program for hardwood-dependent wildlife in cooperation with the California Department of Fish and Game. See Appendix in the Forest Plan.

Topic #T241

I fear ecological damage will occur with the removal of too many trees. Harvest methods should be chosen to minimize the impact and damage to the forest ecosystem. Harvests should be made with the health and diversity of the forest communities in mind.

Response #T241

During the environmental analysis phase of a resource management project several specialists, biologists, and foresters collaborate to determine the best environmental solution to meet the management objectives of the area. If it appears some sort of unacceptable damage may occur to the resource, the project is either altered so this will not occur or mitigation measures are enacted so the anticipated

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damage will be controlled or averted. The Forest Service is guided by many documents to ensure that irretrievable or irreversible damage does not occur.

One of the guiding premises of the Forest Plan is to ensure that the health and diversity of the forest is maintained or is improved.

Topic #T242

I believe in sound forest management and ecology. I feel this can be done without jeopardizing employment and livelihoods. We need timber to survive in the lumber industry.

Response #T242

We agree. We also feel that timber can be produced on the Tahoe National Forest in an environmentally sound manner. The Forest Plan provides the direction for doing so.

Topic #T243

Visual quality and natural integrity/diversity of forest environment are directly linked. The forest functions as an integral element in the natural balance of the North American continent and biosphere.

Response #T243

We agree. The Forest Plan establishes standards and guidelines for visual quality as well as diversity.

Topic #T244

'I believe in the concept of 'Deep Ecology'. Natural environments can stand morally and ecologically on their own, apart from the use they have for humans.'

Response #T244

The purpose of the National Forests was established in the Organic Act of June 4, 1907, 'No national forest shall be established except to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States'

That purpose was supplemented by the Multiple Use-Sustained Yield Act of June 12, 1960 which defined and broadened the role of national forests to be, "administered for range, timber, watershed, and wildlife and fish purposes"

On September 3, 1964, Congress passed the Wilderness Act with the purpose of designating and managing wilderness resources where the 'natural

ecological succession will be allowed to operate freely to the extent feasible.'

This brief outline illustrates that the spectrum of possible management objectives guiding the Forest Service is quite broad. Congress has seen fit to authorize the Forest Service to manage some portions of the National Forest System for the study and maintenance of its natural environment. Additional areas for study are also being considered in the form of research natural and special interest areas while other areas are managed to produce resources that we as a Nation use.

Topic #T245

I oppose manipulation of the natural ecosystem. The negative effects of manipulating the natural ecosystem are: severe reduction of plants and numbers of species, loss of diverse animal habitats, disruption of food chain, reduction of animal population, loss of soil fertility due to erosion and interference with recycling of soil nutrients, deterioration of stream communities, and loss of quality of watersheds.

Response #T245

The Forest Service is responsible for the multiple-use management of the National Forests. It is the policy of this agency to protect the affected resources while providing commodities and amenities. The vehicle used to accomplish this task is the National Environmental Policy Act (NEPA) process.

Topic #T246

The primary goal of management is to preserve diversity of flora and fauna. Forestry practices outlined in various plans can't guarantee this. The Forest Service needs to experiment with small areas over several hundred years.

Response #T246

The primary goal of the Forest Service is to provide a sustained yield of goods and services to maximize long-term public benefits in a cost-efficient and environmentally sound manner. The Forest practices and guidelines described in the Forest Plan are designed to achieve this goal. Several areas on the Tahoe National Forest have been proposed for long term research. Five timber compartments on the Forest have been proposed for the long term study of uneven-aged management using the single tree and group selection cutting methods. The Onion Experimental Forest was created for watershed research purposes. Only activities associated with the identified research goals may be implemented in this

area. Several Research Natural Areas (RNAs) have also been proposed. These RNAs were identified to preserve examples of significant natural ecosystems for purposes of research and ecological study, maintain gene pools, and where appropriate, protect habitats of rare and endangered plants and animals. To accomplish these goals, management activities are directed toward the protection and preservation of the botanical elements for which the RNAs are recommended.

Topic #T247

I believe biological dynamics control a great deal of the forest. This is very critical considering the role of fire, disease and growth cycles.

Response #T247

We recognize the interrelationships of forest ecology and have incorporated these principles into the management practices outlined in the Forest Plan.

Topic #T248

Resources are more valuable for their ecological functions and recreational uses than as cut timber.

Response #T248

The National Forests by law are required to manage the resources for a variety of uses and the sustained yield of goods and services. We believe the Forest Plan provides a balance of commodity and amenity outputs, in an environmentally sound manner. We considered several alternatives ranging from an emphasis on wildlife, recreation, soils, and water to an emphasis on the production of commodities such as timber and range. The Record of Decision displays the alternative that was chosen and the rationale for the decision. See Response T244.

Topic #T250

Under the Preferred Alternative, the amount of quality trees will eventually be reduced. The result will be a genetic imbalance on the TNF.

'The decadent forest ecosystem has been diminished already to the point of maladaptation or genetic drift.'

A portion of each capability area should be undisturbed to assure genetic variation.

Response #T250

The Tahoe National Forest is part of an aggressive genetic improvement program under the direction of the Regional Tree Improvement Program initiated in

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In addition, genetic diversity on the Tahoe will be maintained through natural regeneration. These include areas where seed-tree harvest prescriptions are used in old growth areas designated for wilderness, designated spotted owl habitat, protected riparian areas, streamside management zones, and research natural areas. Through the application of the appropriate standards and guidelines for each management area, the TNF intends to maintain on a forest level at least 5% of each vegetative type existing in the overmature state.

Topic #T251

Pesticides are essential in maintaining a healthy forest. However, they should only be used when there is no adverse effect on the environment.

Response #T251

We use an integrated pest management (IPM) approach to prevent and reduce pest related problems. A full range of management alternatives, including pesticides, is considered on a site-specific, project-level basis following NEPA requirements. The selected treatment is based on biological effectiveness, environmental safety, human health, and cost efficiency.

TOPIC #T252

Pesticides are harmful to the environment (e.g., microbes necessary for decomposition, streams, wildlife, insects, and non-target species)

Response #T252

The Forestwide integrated pest management (IPM) program protects forest resources against unacceptable losses by using methods that will maintain the quality of the environment. See Response T251.

Topic #T253

Reexamine the definition of pests.

Response #T253

Under the integrated pest management approach insects, disease, plants, and animals are recognized as a natural part of the forest ecosystem. They are

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considered pests only when they cause unacceptable damage by interfering with attainment of management goals and objectives. We believe this definition is sufficient

Topic #T254

Not enough attention is given to integrated pest management (IPM) work.

Response #T254

We plan to be aggressive in implementing IPM methods in order to minimize pest problems while protecting people and the environment. Objectives include prevention, prudent timing of treatments, and demonstrating effective IPM strategies. See Response T251.

Topic #T255

What is the extent of the Forest Service's reliance on pesticides?

Response #T255

From 1976-1984 pesticides were applied to about 1119 acres of TNF lands per year by contractors, permittees, and the Forest Service, Herbicides accounted for 1051 acres, insecticides for 36 acres, rodenticides for 26 acres, and fungicides for 6 acres of total annual pesticide use. The changes in timber yields and vegetation management costs that would occur if herbicide use is prohibited or restricted are outlined in the DEIS.

Topic #T256

Birds are an efficient and cost-effective form of insect control.

Response #T256

Biological control of pests does occur naturally; however, their efforts sometimes need to be augmented with other integrated pest management techniques.

Topic #T257

The Forest Service should ensure the safe removal of dead and diseased trees in residential areas.

Response #T257

The Forest Service manages public lands in the National Forest System. Local or state forestry agencies should be contacted for information and assistance on private lands

Trees on National Forest lands which pose a risk to adjacent private properties would be assessed under the integrated pest management program and may involve coordination with private landowners. On areas under special use permit with the TNF, it is the responsibility of the special use permittee to remove dead or unstable trees. The Forest Service role is to provide advice and recommendations to the permittee

Topic #T258

There are dead and dying trees along Highway 89 and nothing is being done with them to prevent the spread of disease.

Response #T258

Along Highway 89 there is a mixture of National Forest lands and private landholdings. The Forest Service manages the National Forest land bordering the highway primarily through a sanitation and salvage program. Occasionally we might leave dead trees in these corridors for cavity-nesting birds if the tree poses no hazard to human safety. We do not manage private lands. Some trees along the highway are removed through Cal-Trans operations.

Topic #T259

Without proper management of timber resources, the forest can be lost through disease and decay. Various comments included:

Logging helps the forest by removing dead and dying trees.

Selective logging reduces the likelihood of insect infestations.

Blighted areas should be clearcut.

Response #T259

Intensively well-managed stands, regardless of the silvicultural system, reduce the risk of significant pest damage. Risks are reduced by diversifying within and among stands (age classes and species) and by maintaining tree vigor through thinning and release.

TOPIC #T260

Some harvest methods create stands more vulnerable to insects, disease, and decay. Both evenage and selectively-logged stands were cited. Standards and practices should address evenage management versus pest prevention.

Response #T260

See Response T259. Reforestation with even-aged stands can present risks which are difficult to predict. Most of the concerns refer to possible adverse effects of monoculture. However, even-aged systems followed by artificial regeneration have an excellent potential for improving genetic quality of trees. Dwarf mistletoe and many root diseases are efficiently controlled by even-aged cutting treatments. Uneven-aged methods used in certain situations may perpetuate and spread infection; they are also more difficult to maintain tree vigor and productivity for certain species.

Selection of a silvicultural system is done by a certified silviculturist on a project-level basis. The attributes of a system are compared with management objectives and specific site characteristics. Harvest methods would follow Forest Plan guidelines, standards, and practices.

Topic #T261

Entry should be deferred for south aspect red fir sands with potential gopher problems.

Response #T261

Entry into stands will be done on a project-level basis, based on site-specific analysis. Integrated pest management activities would include evaluation, suppression, and post-action evaluation. Reforestation treatment needs will consider all feasible alternatives with selection based on effectiveness, environmental effects, and costs.

Topic #T262

Forest managers who are pesticide experts should make the decisions and not armchair entomologists who want to dictate policy. Let's keep our options open for the future.

Response #T262

A full range of pest management activities should be considered and analyzed for each pest situation. This is done on an interdisciplinary team basis following NEPA requirements. The Forest Service does have professional entomologists who are consulted for advice and are involved in the process. However, understanding the issues and concerns raised by the public is also important.

Topic #T263

Clearcutting along 'official and de facto heritage corridors' may lead to a loss of biological forest insect control due to a loss of snags.

Response #T263

Many areas of the TNF, trails and popular travel routes for example, will be managed with an emphasis on visual quality rather than intensive management. Clearcutting would generally not be done in these areas. Snag management is addressed in the Forest Plan Standards and Guidelines. Also see Response T256.

Topic #T291

'Hardwoods are only weed trees to a lumberman.'

Response #T291

It is true most commercial species are softwoods but regionally the Forest Service does sell hardwoods to lumber manufacturers. Locally, hardwoods are sold and used for firewood. The Forest has no commercial sawlog use although a manufacturer in Oroville buys oak logs from other sources.

Topic #292

There is no consideration for the commercial potential of native hardwoods in the forest's alternative.

Response #T292

The TNF has sold hardwoods for forest products other than firewood. Hardwoods are utilized for sawlogs, chips, fiber, and specialty items in other parts of the Region. However, the current demand for hardwoods on the TNF is mainly for firewood.

Hardwood areas often present opportunities for other resource management needs such as for wildlife. See management practice on Hardwoods in the Final Land Management Plan EIS.

Topic #T293

Do not cut hardwoods and replace with pines.

Response #T293

The Forest Plan includes a practice concerning hardwood management and it does allow for hardwood reduction in some areas to increase opportunities for reforestation of commercial softwood timber. However, in other areas determined to contain special resource needs such as key wildlife habitats, special watershed conditions, or unusual scenic qualities, hardwoods would either be maintained at specified levels or maintained in total.

Topic #T294

The beneficial role of hardwoods in the forest nutrient cycle should be recognized and their growth encouraged

Response #T294

We agree. See Responses #T293 and #W053 and the Practice on Hardwood Management in the Land Management Plan

Topic #T301

Law enforcement for illegal firewood cutters is lacking. Suggestions were made for a checksite at the junction of Highway 89 and Fiberboard Road.

Response #T301

We realize the magnitude of illegal fuelwood gathering and is doing its best to control the situation. Budgets and limited personnel available constrain our efforts.

Law enforcement personnel are in the woods at various times during the day and week. The Forest Service has cooperative law enforcement agreements with the Placer, Nevada, and Sierra County Sheriffs Offices and routinely cooperates with other state and federal law enforcement agencies. Checksites have been established at the above location, and several other sites across the forest, at various times to curtail illegal firewood cutting.

Topic #T302

Firewood permits should be limited for non-county residents in order to benefit Sierra County residents.

Response #T302

The TNF issues fuelwood permits to the general public regardless of place of residence. This is a National Forest, and we cannot limit the number of permits to benefit specific county residents; however, location and corresponding travel time naturally provide local residents with an economic advantage.

Topic #T303

There is a concern that firewood cutting will have adverse impacts on snag-dependent species. Firewood cutting should be controlled.

Response #T303

A Standard and Guide on snag management has been developed to address this situation. Snag cutting for fuelwood would only occur in designated areas and would not be permitted if the snag level would be reduced below established minimums. See Responses #W058 and #W060.

Topic #T304

Fuelwood programs should be maintained or increased to meet public demand.

Response #T304

The demand for fuelwood has increased with fluctuation from the last decade. We believe we can meet this demand.

The amount of fuelwood available for consumption is balanced among other demands for wood fiber. The TNF will offer fuelwood to the extent it is available through the timber management programs (such as site preparation, thinning, and timber sales) and is compatible with other resource management programs and needs.

TOPIC #T305

There is enough hardwood depletion from fuelwood removal without further large scale removal. Selective management would eliminate this problem.

Response #T305

See General Timber Responses T293, T303, T304, and Wildlife Responses W053, and W054

TOPIC #T306

State and private enterprises should become a greater source of firewood.

Response #T306

The Forest Service manages only those public lands within the National Forest System. See Forest Plan, Chapter VII, State and Private Forestry.

Topic #T309

Wood consumption can be reduced by increasing recycling efforts or finding substitutes for wood products. The Forest Service should expand its research in this area and encourage its use.

Response #T309

Research is one of the three major branches of Forest Service activities. Utilization and conservation measures are studied at Forest Service research

laboratories and experiment stations. However, it is beyond the scope of the TNF Forest Plan to implement or initiate such research measures.

Topic #T311

Manage idle private lands to increase the private sector's production potential.

Response #T311

The Forest Service only manages public lands within the National Forest System. The Forest Service does coordinate with other landowners to use opportunities for mutual investments and programs to enhance protection or outputs from adjacent lands. See Forest Plan Guideline on Coordination with Other Ownerships and Agencies and Chapter VII, State and Private Forestry.

Topic #T312

The needs of a herbalist and wildcrafter are not addressed. Plants, which are not endangered, are neglected and hold no value with the Forest Service. They are pillaged during harvest, burned, and sprayed with herbicides.

Response #T312

The Forest Service attempts to meet the needs of a wide variety of users and to provide a balance between commodity outputs and amenity values. If you have some specific plants in mind that you use on a regular basis and that you are having trouble finding, please stop by the local district office or Forest headquarters for assistance and for obtaining a collectors permit. The activities on the Forest including timber harvesting and prescribed burning should not eliminate the plants you need although your gathering locations may change. One of our goals is to provide a diversity of plant and animal communities and tree species. Indicator species help us monitor the situation. Guidelines and standards have been developed to provide direction for management activities and for protection to the environment. See Responses T233 and G019.

Topic #T313

Wood production is a renewable source of energy. Various comments included

'Wood production is replaceable if harvest is done properly.'

'Wood production is needed for fuelwood and energy-producing plants.'

Response #T313

Since the demand for wood is increasing, there is an opportunity to increase production and use of wood fiber. A goal of the Forest Plan is to maintain or enhance wood fiber production.

To the extent it is compatible with management objectives and other resource needs, the TNF will consider economic uses of forest resources and provide opportunities for optimizing yields of forest products. Management activities would follow Forest Plan guidelines, standards, and practices. See

Response T157

Topic #T314

Better utilization of present forest growth is needed. Various comments included:

'Use shrubs, suppressed trees, and slash for energy-producing plants and construction.'

'Increase TSI work as a means of providing post and poles.'

'Convert marginal lands to wood fiber plantations.'

Response #T314

Small diameter material presently has a limited market; high costs associated with transporting and processing also make it economically unappealing. See Response #T081-3. Potential wood fiber energy (biomass and fuelwood) was analyzed for each alternative. Data is displayed in the DEIS, Table 4.40, pgs. 4.125-4.126.

Commercial forest land is defined as that land capable of producing at least 20 cubic feet/acre/year. Those lands not meeting this criteria or those lands which are currently not suitable due to excessive development costs, low product values, or resource protection constraints present opportunities to meet other resource management objectives.

Topic #T315

What percent of the timber cut on the TNF produces wood chips and homes?

Response #T315

A very small percentage of the Forest's allowable sale quantity goes into chips. The majority of the wood cut on the TNF is processed into construction lumber. The harvest of approximately 148 MMBF would supply about 11,350 average-size three bedroom homes (13,000 bd.ft./home).

Topic #T316

Statements on pg. 2.9 fail to track with figures in Table 2.1 (DEIS pg. 2.9):--Text -Timber production could be increased 30% above the current level, according to TBR; Table 2.1 = 25%.

Response #T316

The difference has been noted and has been corrected in the FEIS. Thank you for pointing out apparent inconsistencies. We have been correcting the final documents as we find these discrepancies. The important point is that this is a complex analysis and plan. Every effort has been made to make it accurate and consistent. We believe in total the analysis is sound.

Topic #T317

Further explanation for the last sentence in the first paragraph under Predicting Potential Harvest Volumes (DEIS, pg. 3.69) is needed. If for a given set of standards, yields reduce at greater rates than corresponding reductions in lands allocated, it seems that the reductions in lands allocated must be the more productive lands.

Response #T318

We agree. The discussion in the draft was confusing and, in this case, misleading. We have rewritten this section in the FEIS.

Topic #T318

The discussion of mortality for alternatives A, C, and K (DEIS, pg. 433) seems to say that mortality would be both greater and less.

Response #T318

What was written in the FEIS is correct. Mortality for Alternatives A, C, and K would be less than that predicted for Alternatives I, D, and B, over the long run (50 years) because there would be more unsuitable timber land (not managed for timber production) in Alternatives A, C and K than in Alternatives I, D and B. There would be less mortality than the current situation, because some areas presently in an unmanaged, roadless state would come under management for timber production in Alternatives A, C, and K.

Topic #T319

The FEIS needs to provide information on the juniper and other woodland species.

Response #T319

Information on woodland species was provided in Chapters 3 and 4 of the DEIS under 'Vegetative Types'

Topic #T320

Clearly display important biological data for each Management Area such as acres on non-forest land, slope class, strata and cubic feet/acre/year productivity, and acres of riparian vegetation

Response #T320

The detail of information you requested is not available or required by the National Forest Management Act of 1976 at this level of analysis. That type of information is collected when projects are proposed. At that time stand exam data is collected to determine the growth rates of the trees, the amount of wetlands, riparian habitat, non-commercial land etc.

Topic #T321

The plan only provides detailed objectives for the timber production and fire suppression goals. The plan provides scheduled outputs for other multiple use goals, but fails to provide the detailed methods by which these outputs will be realized.

Response #T321

The plan provides general direction and goals. The detailed information you request about how these goals will be achieved is done at the project analysis level. During the compartment analysis phase we look at opportunities to carry out other projects to meet the goals established in the plan.

Topic #T322

The plan must clearly state the actions that will be taken, resources used to achieve all the forest goals. Sustained yield must be truly consistent with maintenance and improvement of soil productivity, water quality, native plants, and animals

Response #T322

Management prescriptions have been defined for each management area on the Forest. When specific projects are proposed to achieve the goals set for a management area the appropriateness of applying those particular prescriptions will be analyzed on a site specific basis. Analysis of sustained yield is done at the National Forest level. Each alternative in the DEIS and FEIS was analyzed for sustained timber yield through the planning horizon (16 decades)

4 do reflect the protection measures for the other resources.

Topic #T323

The DEIS fails to comply with 36 CFR 219 (g) (1). It fails to display the detailed effects of each alternative. The displays of average annual outputs/decade of each alternative are based on inadequately documented standards, guidelines and practices; the outputs are not linked to protection of the soil, water, air, recreation, wildlife and visual resources.

Response #T323

The section of the code of federal regulations that you have cited requires the forest plan to display expected outputs for marketable goods and services and the nonmarket items, such as recreation, wilderness use, wildlife, fish etc. Those outputs are described throughout Chapter 4 - Environmental Consequences of the EIS. The standards and guidelines described in the land management plan which will provide for the protection of soil, water, air, recreation wildlife and visual resources were modeled in FORPLAN. The outputs described in Chapter

Topic #T324

The DEIS violates 40 CFR 1502.15 and 1502.16 by failing to discuss and disclose the adverse cumulative environmental impacts of management practices on TNF lands in conjunction with the same practices in private, state, or other public ownership on the last wild roadless and old growth forest areas.

Response #T324

The specific regulations you have cited do not require cumulative impacts to be addressed. General requirements for cumulative effect analysis are identified in 40 CFR 150825 and 150827 Cumulative effects of the amount of mature and overmature forests and the amount of area roaded and recreation opportunities are disclosed in Chapter 4- Environmental Consequences. When an analysis is done for a specific project cumulative effects are looked at in greater detail.

TIMBER, (CLEARCUTTING)

Topic #T051

Clearcutting should not be done on the Tahoe National Forest (opposition is stated in general terms with no reference to specific resource impacts).

Response #T051

In the Final Plan the volume and acreage harvested by clearcutting was reduced and the volume and acreage harvested by selection and group selection was increased. All timber harvest systems will be available to manage the timber resource. Specific silvicultural prescriptions to be used will be based on the standards and guidelines and management emphasis stated in the description of each Management Area. Site-specific silvicultural prescriptions will be developed during the project planning phase and will be documented through the project environmental analysis in compliance with NEPA.

For a discussion of the rationale for using even-aged timber management, refer to Appendix L of the Final EIS.

Topic #T052

Clearcutting should not be done on the Tahoe National Forest because of its adverse effects on wildlife habitat and biological diversity.

Response #T052

Refer to wildlife response W023 and W024.

Topic #T053

Clearcutting should not be done on the Tahoe National Forest because it causes erosion, siltation of streams and rivers, and has an adverse effect on water quality and fish habitat. Clearcutting may also increase the risk of downstream flooding.

Response #T053

Diligent application of Best Management Practices (BMP's) will minimize erosion, siltation and adverse effects on water quality caused by clearcutting. There are nearly 100 BMP's, most of which address timber harvest, road construction and site preparation.

Cumulative watershed effect analyses will be done for individual projects to estimate the in-channel and downstream effects of increased runoff and/or sedimentation due to clearcutting. Appropriate mitigation measures will be incorporated into the projects

to minimize these effects. Post-harvest monitoring will be an important part of our watershed management activities

In the Final Plan the total acreage allocated to intensive, even-aged management has been reduced. A corresponding decrease in clearcutting will occur. Also, standards, guides, and practices directing the management in riparian and streamside zones have been revised for the Final Plan. In essence, timber harvest will not occur within 100 feet on either side of perennial streams, lakes, and other bodies of water unless it is to benefit riparian dependent resources

Topic #T054

Clearcutting is ugly.

Response #T054

We recognize that many people consider recently harvested stands to be ugly. Landscape architects work with foresters designing the harvest units to soften the visual impact. Design measures incorporated could include leaving patches of small conifers and hardwoods uncut, leaving buffer zones of timber and brush along stream courses and modifying the boundaries of clearcut units to better blend with the natural surroundings. Many areas of the Forest, particularly near recreation areas, lakes, streams, trails and popular travel routes, will be managed with an emphasis on visual quality rather than timber production. Generally, clearcutting, unmodified, would not be done in these areas.

Topic #T055

Clearcutting has adverse effects on soil productivity.

Response #T055

Loss of soil productivity can result from erosion, loss of available nutrients, soil displacement, soil compaction and repeated burning of vegetation. All soil disturbing management activities, including clearcutting, have the potential for reducing soil productivity. This potential should be minimized by the application of various Best Management Practices (BMP's) and other mitigation measures. More than 20 BMP's have been adopted to mitigate impacts on soils in the area of timber harvesting alone, with many others relating to reforestation. Those BMP's relating to harvest are incorporated into the timber sale contract.

We have also developed a series of standards and guides which address soil productivity. Soil porosity, soil cover, large woody material and forest duff are specifically addressed. With these standards and guides to direct minimum mitigation, impacts to soil productivity should be minimized. We will continue to monitor the effects of clearcutting on soils and will implement additional measures if needed. See Responses S003, S005, and S008.

Topic #T056

Clearcutting limits recreational uses of the forest.

Response #T056

It is true that clearcutting will limit some types of recreation for a time until a new stand is established. Other forms of recreation are enhanced due to the increased access provided by logging roads. Many of the popular recreation areas as well as travel routes and trails have been given special designation which will maintain the natural appearance of the forest. Special cutting practices other than clearcutting will be used in streamcourse management zones and around all lakes and reservoirs.

We recognize the increasing demand for recreational opportunity on the Forest and believe these demands can be met and are compatible with a timber management program that includes clearcutting. See Responses R150, R154 and R158.

Topic #T057

Clearcutting is an untested practice. The long-term cumulative effects on the environment are not well understood.

Response #T057

We disagree. Nature has been making clearcuts by means of fire, insects, disease, wind and other phenomena for millions of years. These areas have been reforested successfully without man's help. Using modern forestry practices, clearcuts, whether man-made or not, can be and have been reforested faster and with less impact to the environment.

The major potential adverse effects of clearcutting are well known, i.e., erosion, sedimentation in waterways, soil compaction, and loss of soil productivity through soil or nutrient loss. More than 20 Best Management Practices (BMP's) have been adopted to mitigate these adverse effects in the area of timber harvesting alone, with many others relating to reforestation. We have also developed new standards and guides to maintain soil productivity specifically addressing soil porosity, soil cover, large woody

debris, and forest duff. We will continue to monitor the effects of clearcutting and will implement additional mitigation measures if needed.

Topic #T058

Clearcutting is depleting the forest reserves. Current harvest levels are not sustainable and will result in future timber scarcity and fewer employment opportunities.

Response #T058

We disagree. The current harvest levels are less than the long-term, sustained yield capacity of the TNF. The Forest Service, by law, must operate under a policy of even-flow, sustained yield. While yearly harvest levels may vary depending upon budgets and timber demand, the capacity of the available and suitable forest land to produce timber should not decline.

Topic #T059

Clearcutting benefits the short-term interests of the timber industry at the expense of the public and long-term forest productivity.

Response #T059

Clearcutting is a cost-effective harvest method, and a proven tool for reestablishing new stands of healthy, vigorous trees. Harvesting costs are often lower for clearcut units resulting in higher values for the timber. These higher values are reflected in higher bid rates paid for the timber. All timber sales are sold competitively, and the purchasers bid according to their estimates of the selling value of the timber and the costs of harvesting and processing. Efficient, cost-effective harvesting benefits both the purchaser and the public.

Long-term productivity is one of the primary goals of National Forest timber management. The Multiple-Use Sustained Yield Act requires that all National Forests be managed to provide an even flow, nondeclining yield of forest products. Even-aged management, including clearcutting, is an effective tool for maintaining long-term productivity of our forests.

Topic #T060

Reforestation of clearcut areas has not been successful.

Response #T060

We disagree. We have over 50 years of experience in reforestation of natural and man-made clearcuts. There have been problems from time to time, espe-

Timber (Clearcutting)

cially when natural regeneration techniques failed to produce adequate seedlings, leading to brush encroachment Today, we use healthy, nursery grown seedlings to replant most cutover areas. Seedlings are planted during the spring months when conditions are best for survival and growth. New plantations are monitored frequently to assess survival and measures are taken to enhance growth.

Topic #T061

Clearcutting of large areas should not be done (many comments were received regarding clearcut size; most respondents consider 'large' to be greater than 10 acres in size).

Response #T061

The average size of a clearcut on the TNF is estimated to be approximately 15 to 20 acres in size. The size of clearcut units will depend on the topography of the land being considered for harvest, the existing or planned road system, as well as other resource considerations. The range of size of clearcuts will be from five acres to 40 acres. Clearcuts cannot exceed 40 acres without obtaining prior approval from the Regional Forester. Clearcut size will be determined during the site-specific project planning phase through the project environmental analysis in compliance with NEPA. See Response T067.

Topic #T062

Clearcutting on steep slopes should not be done. (Most respondents consider slopes over 30% to be 'steep?').

Response #T062

Timber harvest, including clearcutting, would occur on the suitable and available land base as prescribed by the management direction for each Management Area. The harvest method is determined during the site-specific project planning phase through the project environmental analysis in compliance with NEPA. On slopes greater than 35%, cable or aerial logging systems will normally be used to minimize soil disturbance. The new standards and guides developed to maintain soil productivity would also reflect slope in determining necessary mitigation needs.

The Final Plan will make greater use of group selection and individual tree selection than the Draft Plan. Practices will be encouraged, where feasible, to reduce the need for broadcast burning on steep slopes. These practices may include whole-tree

yarding and protection of residual trees. In areas of sensitive watersheds, with very high erosion potential, and on slopes over 70%, clearcutting may not be used.

Topic #T063

Clearcutting should not be done in roadless areas.

Response #T063

The California Wilderness Act of 1984 designated the Granite Chief Wilderness and released the 10 remaining roadless areas on the Forest to other multiple uses. A new Management Area (MA) within the North Fork of the American River Canyon will remain roadless with no regulated timber management occurring. Other released roadless areas will be considered for timber harvest using clearcutting, shelterwood, group selection, and single tree selection depending on the physical characteristics and management objectives of the unit. Some areas will be managed with an emphasis on semi-primitive, non-motorized recreation which will exclude clearcutting.

Timber management within roadless areas will be guided by the MA direction stated in the Final Plan. Within those MA's containing suitable and available timber lands unencumbered by other resource constraints, road building and clearcutting could occur. See Responses R035, R036, and R038.

Topic #T064

Clearcutting should not be done in stream-side areas.

Response #T064

We agree. Timber harvest will not be allowed in perennial streamside zones (which includes a minimum of 100 feet on either side of perennial streams, lakes, and other bodies of water) unless it is to benefit riparian dependent resources. Clearcutting may be allowed adjacent to ephemeral and intermittent streams provided that harvest and post-harvest activities do not prevent the attainment of SMZ ground cover and riparian vegetation goals. See Response #H001.

Topic #T065

Clearcutting should not be done in specific geographical locations (respondents identified a long list of locations):

The high timber outputs of Alternative 1 are a result of intensive management techniques including even-aged management. Even-aged management utilizes clearcutting as a harvest method. Therefore, in order to achieve higher timber yields, clearcutting is necessary. In the Final Plan, the total acreage allocated to intensive, even-aged management has decreased from the Draft Plan (Alternative A). This has

Response #T069

I support higher timber outputs (Alternative 1) but with less clearcutting.

Topic #T069

Alternative 1 was not selected because it did not provide a suitable balance of resource outputs achieved by the Preferred Alternative.

In the Final Plan the volume and acreage harvested by clearcutting is reduced from that described in the Draft Plan (Alternative A). Even-aged management, including clearcutting, will continue to be the principle silvicultural method for suitable areas of the TNF.

Response #T068

I support clearcutting at the levels described in Alternative 1.

Topic #T068

NEPA. See Response T061. Clearcutting is generally defined within Region Five as being the harvest of all merchantable trees within a stand of three acres or more. Clearcutting of timber land will be under even-aged management, however, with clearcut sizes ranging from three to 40 acres. Clearcut size will be determined during the site-specific project planning phase through the project environmental analysis in compliance with

Response #T067

Clearcutting should be limited to small areas (1-2 acres).

Topic #T067

Timber (Clearcutting) and workshops with special interest groups and agencies. We will continue to look for ways to increase public understanding of Forest management and our understanding of their concerns

We recognize the need to better improve our communication with the public. Many Forest practices are not well understood by the public. We also recognize the validity of all opinions whether "educated" or not. During the public comment period for the Draft Plan, we sponsored eight public meetings, five open houses, three hearings and 35 other meetings

the Final Plan, however

Even-aged management, including clearcutting, will continue to be an important silvicultural method for the suitable areas of the Forest. The total volume and acreage allocated to clearcut harvest is reduced in

Response #T066

Clearcutting is an appropriate management tool. I support clearcutting at the levels and locations described in the Draft Forest Plan. The public is not well informed about the applications and benefits of clearcutting.

Topic #T066

Timber harvest, including clearcutting, may occur on the suitable and available land base as specified by the management direction for each Management Area (MA). Management direction has been revised in the Final Plan for many MA's which will restrict clearcutting in some of the specific locations identified by the public response. For example, a new MA has been created within a portion of the North Fork of the American River Canyon which will exclude clearcutting in other MA's a higher visual quality objective has been established which will restrict clearcutting in foreground areas. In addition the Final Plan has increased the width of special management zones along perennial streams and lakes. Clearcutting will not occur immediately adjacent to any perennial streams or lakes unless it is done specifically to enhance riparian vegetation.

Response #T065

Lawezolla Canyon	Empire Creek	Faddessnake Creek
Downie River	Lovers Leap	Casa Loma
Mt. Lola Trail	Sailor Flat	Green Valley
Euchre Bar	Italian Bar Trail	Western States Trail
Meadow	Granthville Road	Moonshine Road
Trail		
Castro Road	Bowman Road	Washington Road
Faucherite	Duncan Canyon	Campdonville Area
Yuba Pass Road	Sardine Lakes	McMurray Lakes
Sawmill Road	French Lake	Five Lakes Basin
Grouse Ridge	North San Juan	North Fork of Yuba River
Area	Truckee Area	Middle Fork of Yuba River
Downville Area	Sierra City Area	South Fork of Yuba River
Sierra Buttes Area	Tinker's Knob Area	Canyon Sale, Unit #32
Mt. Lola Area	Wolf Creek	Grizzly Creek
Royal Gorge		

Timber (Clearcutting) resulted in a corresponding decrease in timber outputs.

Topic #T070

Clearcutting should not be done in the North Fork of the American River Canyon.

Response #T070

We agree that there are portions of this canyon that should not be managed intensively for timber production. A new management area (American #087) has therefore been created in a portion of the NFAR Canyon which will remain unroaded and unavailable for scheduled timber harvest. Refer to the Appendix of the Final EIS for a map of MA #087.

Topic #T071

I support all silvicultural methods including clearcutting. Clearcutting should be used where it is determined to be the best method.

Response #T071

The National Forest Management Act of 1976 (NFMA) requires that all harvest systems be evaluated in order to select the best method for a particular stand of timber. Even-aged management, which uses the shelterwood, seed-step and clearcut harvest methods, has often proven to be the most effective system for meeting these objectives.

Refer to Appendix L in the Final EIS for a discussion of silvicultural systems and their applications. Also, see Response T032.

Topic #T072

Clearcutting should not be done because it goes hand-in-hand with herbicide use.

Response #T072

Clearcutting does not necessarily presume the use of herbicides. If competing vegetation problems are anticipated in the project planning process, a full range of pest management alternatives, including cultural, biological, chemical and mechanical methods are considered. Specific treatments will be se-

lected through the environmental analysis process in compliance with NEPA. Treatment effectiveness and costs of each alternative are analyzed on a case by-case basis. If pesticides are used, it must be in accordance with pesticide-use management and coordination policy. See Response T271

Topic #T073

Clearcutting of high elevation red fir stands should not be done. Economic returns from harvest of low value timber do not support the high cost of road construction.

Response #T073

The silvicultural prescription to be used in red fir stands will be based on a sitespecific project analysis. Where there are no overriding visual, wildlife or watershed constraints, clearcutting small patches or strips in red fir is an effective method of achieving natural regeneration. Because of problems with wind firmness and susceptibility to logging damage, selection cutting is sometimes undesirable in red fir stands.

The economic viability of each individual timber sale can vary widely. The Forest Service is not required to match the costs of road construction with timber value for each sale. We are required to pay for reforestation costs out of timber receipts, but roading costs may be discounted over many years and several harvest entries. It is true that receipts from red fir harvest are generally lower than those from pine and other species but road construction costs are not necessarily higher in red fir stands.

TOPIC #T074

The DEIS fails to provide alternatives without clearcutting and herbicides.

Response #T074

Alternative NIMK (Nonmarket) has been added, which provides for harvesting timber without utilizing clearcutting and herbicides.

TIMBER, (HERBICIDES)

Topic #T271

Numerous comments were received that generally opposed the use of herbicides as a vegetative management tool due to concerns about adverse effects to the ecosystem.

Response #T271

A comprehensive risk analysis is displayed in the Supplement to the Vegetation Management for Reforestation, DEIS (April 1986). It includes environmental consequences to soils and water quality, wildlife habitat, fisheries habitat, and human health and safety issues. It also presents analysis which reflect both positive and negative aspects of the available vegetation management methods.

In February, 1989, the Pacific Southwest Region issued the FEIS, Vegetation Management for Reforestation. The Regional Forester's decision allows for the full range of methods for controlling competing vegetation, including limited herbicide use. Integrated pest management projects will be planned with a site-specific, project-level environmental analysis in compliance with NEPA prepared for each. This interdisciplinary analysis will consider a full range of pest management alternatives, including cultural, biological, chemical, and mechanical methods. Specific treatment method(s) will be selected through the environmental analysis in compliance with NEPA, which will consider environmental affects, treatment efficiency, and the costs of each alternative. See Forest Plan Guidelines regarding integrated pest management.

Topic #T272

The use of herbicides is opposed. Manual or mechanical means should be used to accomplish vegetation management objectives

Response #T272

We do consider mechanical and manual integrated pest management (IPM) methods as discussed in forest Plan Guidelines. Recommendations for IPM methods and uses are also discussed in Forest Service manuals and handbook.

Topic #T273

There has been inadequate consideration given to the development of a range of alternatives for herbicide use and also to the response given for Forest Plan, pg IV.11, Item 7.

Response #T273

We did analyze an alternative which excluded herbicide use. See the Citizens' Alternative (NMK). Also, four different policy options for herbicide use were analyzed in Appendix M of the Final EIS

Topic #T274

More statistical data regarding herbicide use and risk analysis should be presented through educational forums and displayed in the final document

Response #T274

The National Environmental Policy Act (NEPA) requires that adequate information on proposed actions that will affect the environment be provided to the public. Public meetings were held during the analysis of the Vegetation Management for Reforestation, DEIS and its Supplement (risk analysis). For the Supplement, 8 briefings and 8 hearings were held to inform and solicit comments from the public. These meetings occurred in Redding, Eureka, Sacramento, Fresno, and Riverside during the summer of 1986. Additional media briefings were held when the FEIS was released in February, 1989

The Forest Plan displays statistical data regarding proposed needs for integrated pest management (IPM) projects. A full range of IPM methods will be analyzed on a site-specific, project-level basis through the NEPA process. See Forest Plan Guidelines for Integrated Pest Management.

Topic #T275

Herbicide use will eliminate plant species diversity due to indiscriminate destruction of non-target species

Response #T275

The Forest Service believes species diversity would not be eliminated through herbicide use. The objective of herbicide application is to minimize the ability of non-coniferous vegetation to compete with conifers during the first 2-7 years of establishment and growth. With aerial applications, herbicides mainly affect the dominant or upper vegetation canopy. Hand applications only affect the vegetation on which herbicides are applied directly. Growth of treated vegetation is moderately to severely retarded, but it will usually sprout within one to two years following application.

Topic #T276

Use harvest methods which reduce or eliminate the conditions that perpetuate competitive vegetation growth and the need for herbicides.

Response #T276

The effectiveness of single-tree harvest systems is limited due to the ability of commonly-occurring competing plants to retain good vigor when shaded by conifers (e.g. manzanita, bear clover, tanoak or madrone). As a result, vegetation management is still a necessity regardless of harvest method. Methods for managing competitive vegetation are analyzed and determined through application of Forest Plan Guidelines for integrated pest management.

Topic #T277

Herbicides should be prohibited in order to provide a clean and scenic environment. Their uses are not compatible with recreation and visual management.

Response #T277

Visual management and recreation use affected by vegetation management proposals will be analyzed on a sitespecific, project-level basis through the NEPA process. If herbicides are used, mitigation is implemented to insure that the chemical reaches the target plants only. Buffers around non-target resources and/or developments are used to prevent the chemicals from reaching these areas. We believe that any effects through herbicide use on target areas would only be short-term. This assumption is based on the fact that sprouting of target vegetation will occur within one to two years following application. Recreation use in the immediate vicinity of a recent application would be regulated for a short time to assure user health and safety.

Topic #T278

I am opposed to the use of herbicides because of air pollution.

Response #T278

Herbicide drift, which could result from aerial applications, is controlled by restricting applications to periods when specific environmental and physical parameters can be met. For example, project implementation has been suspended when any of the following conditions occur:

- 1) Wind speeds exceed 6 miles per hour.
- 2) Humidity drops below 50%

Additional project specifications to minimize herbicide drift have included.

- 1) Operating spray pressure between a range of 20-35 psi.
 - 2) Aircraft shall not exceed an airspeed of 45 mph or fly higher than 75 feet above the brush canopy
 - 3) Project shutdown if specific product label instructions cannot be met
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Topic #T279

There is concern over the potential contamination of private property, decline in property values, and short- and long-term health risks

Response #T279

Forest Plan Guideline on Coordination With Other Ownerships, describes how coordination with adjacent landowners will include integrated pest management (IPM) planning. IPM planning will consider and analyze a full range of alternatives through the NEPA process. This will provide private land owners the opportunity to express their concerns through public involvement meetings or correspondence. Also see Responses T271 and T274.

Topic #T280

I am opposed to the use of herbicides in the Yellow-jacket Creek drainage because of potential surface water contamination.

Response #T280

The planning of vegetation management projects in watersheds is guided by seven Best Management Practices (5.8-5.14, see Plan Appendix E) that specifically address the protection of water quality and riparian areas when using herbicides. Chemicals are carefully selected and then applied using EPA and OSHA approved methods. Care is taken to minimize over-spray and drift. As with any treatment method, herbicides would be analyzed on a site-specific, project-level basis and be examined for relative effectiveness, environmental effects, costs and public concerns. See Response T279.

Topic #T281

We are opposed to the use of herbicides in the American River Canyon

Response #T281

A new management area (American M 9 has been designated for a portion of the North Fork American River Canyon. This area will remain semi-primitive and **unavailable** for regulated timber harvest and related management activities, unless unforeseen needs for pest management are Identified Harvest, if any, would occur through a sanitation and salvage program and would usually not require vegetation management as a follow-up treatment.

Topic #T282

I support the use of herbicides for initial release provided that subsequent release treatments be performed by manual means.

Response #T282

Subsequent treatments would require analysis of a full range of alternatives through the NEPA process just as the initial release project would. Also see Herbicide Response T271.

Topic #T283

I support herbicide use as a forest management tool when properly and carefully applied.

Response #T283

It is required that individuals involved with the implementation of herbicide projects be thoroughly trained in the proper and safe methods of application as specified by EPA and state regulations.

Topic #T284

If, through the development of the supplement to the regional DEIS, a more restrictive herbicide policy results, consideration should be given to new alternatives conforming to the new vegetation management policy without sacrificing timber volume outputs.

Response #T284

The Regional Forester's decision of February 27, 1989 on the FEIS for Vegetation for Reforestation, allowed for a range of methods for controlling competing vegetation, including use of some herbicides. The decision was made, in part, after consideration of the timber volume impacts of eliminating all use of chemicals. Projected impacts for the TNF are displayed in Chapter 2 of the FEIS by alternative. Using the NEPA process as applied through Forest Plan Guidelines, a full range of alternatives for the control of competitive vegetation will be evaluated on a project-level basis.

Topic #T285

The Forest Service should not justify the use of herbicides based on the National Forest Management Act mandate to reforest areas following the harvesting of trees.

Response #T285

The Forest Service does not justify the use of herbicides based on the National Forest Management Act. Vegetation management proposals are evaluated and analyzed through the NEPA process. A full range of management methods are considered on a site-specific, project-level basis. See Forest Plan Standard and Guides on Integrated Pest Management.

Topic #T286

The Forest Plan should address treatment of exotic weeds introduced as a result of site disturbance.

Response #T286

Exotic weed invasions are considered under the integrated pest management Standards and Guides in the Forest Plan. After treatment needs are identified, appropriate methods for control will be determined through the analysis of a full range of alternatives developed through the NEPA process.

Topic #T287

Opposes the application of herbicides due to the destruction of wildlife habitat and harmful effects due to direct contamination.

Response #T287

Numerous studies of direct effects of herbicides on wildlife indicate that there is little direct danger to wildlife when chemicals are applied properly and at recommended rates. For more information refer to the Supplement to the Vegetation Management for Reforestation, DEIS (April 1986).

Topic #T288

If vegetation management is eliminated, why is there not a -100% cost change in all the vegetation types displayed in Table 2.4 of the DEIS?

Response #T288

In reviewing Table 2.4, we found that under the 'Change in Cost' column the percentage figures for No Vegetation Management included costs for reforestation except for red fir. Natural regeneration was

Timber (Herbicides)

assumed for red fir which eliminated reforestation costs. This should account for the -100% in costs. In the FEIS this problem was corrected by changing the scenario title to 'No Herbicides' and adding a footnote explaining which costs were included.

TOPIC #T289

DEIS 2.28, the table which shows the loss for curtailment of aerial spraying and herbicide application does not mean anything unless the timber yield figure is explained. Does it represent dollars or cubic feet? The table should properly include an esti-

mate for change in net public benefit which would be achieved by restricting these practices.

Response #T289

The timber yield figures were developed from the June 1983 Vegetation Management DEIS which used the measure of board feet. For the purposes of this analysis, we believe that the differences in cultured treatments are adequately portrayed with changes in timber yields and timber management costs.

TIMBER (OLD GROWTH)

Topic #T211

Preserve old growth and climax trees for posterity, living history/heritage, biological diversity, and the scientific and ecological value. Old growth protects endangered wildlife, visual quality, and marshes and meadows. Old growth areas should be preserved as wildlife, watershed and recreation areas with no timber harvesting occurring in them.

Response #T211

We recognize old growth as an important natural resource. Several thousands of acres have been legislatively withdrawn or administratively withdrawn from timber production by the Secretary or Chief of the Forest Service. These acres are not available for timber management. Included in this category are The North Fork American River, the Granite Chief Wilderness, and the Onion Creek Experimental Forest. These three areas encompass approximately 27,000 acres. In addition to this acreage the 11,018 acre Grouse management area, the 6,675 Cedars management area, the 1,596 acre Queens management area, and the 7,000 acre Snow management area is unavailable for timber production. At least 34,000 acres (much is old growth) will be set aside for spotted owl habitat, and large old trees will be maintained along several hundred miles of travel influence zones and streams. Approximately 1900 acres recommended for Research Natural Areas (RNA's) will also maintain old growth of different species. The Research Natural Areas are established to preserve examples of significant natural ecosystems for purposes of research and ecological study, RNA's also serve to maintain gene pools and where appropriate to protect habitats for rare and endangered plants and animals.

Topic #T212

I feel guidelines should specifically provide for preservation of the finest old growth within selection cut zones

Response #T212

See Response T211. Special cutting methods are also described in the Final Plan which will allow large old trees be left along travel influence zones and streamside management zones.

Topic #T213

I want the remaining old growth placed in a 250+ year harvest schedule.

Response #T213

The Tahoe National Forest is retaining a large amount of old growth as discussed under T211. In several management areas land will be managed under the reduced timber scheme. An example of this is using even-aged or uneven-aged management on a long rotation basis to meet partial retention objectives.

Topic #T214

Old growth habitat should be managed at current levels of output to maintain an economically and ecologically diverse forest.

Response #T214

The objective of all the alternatives developed by the Forest Service is to maximize present net value. This is in response to the need to produce commodity and amenity outputs in the most economical manner. To achieve this, harvest schedules are developed in highly productive stands. These stands would be reforested promptly, maintaining a network of high producing stands. This should maintain an economically and ecologically diverse forest.

Topic #T215

I see old growth trees that are rotting and dying. These trees should not be wasted. The forest needs sound management so trees can be reused. Need to log old growth trees that are no longer growing at an average rate.

Response #T215

The Tahoe National Forest has a salvage sale program for utilizing dead and dying timber. Salvage timber is included in commercial timber sales whenever it is economically feasible and environmentally sound. Some dead trees need to be left to meet wildlife habitat needs. Old growth timber is being harvested on the Tahoe National Forest and will continue to be under the Final Plan. Our policy is to maintain at least 5 percent of each vegetation type in the overmature state in order to maintain desired diversity.

Topic #T216

Old growth should be protected at the following sites:

Timber (Old Growth)

Long Point Grouse Lake RA	Lafayette Ridge North Fork of the Middle Fork of the American River Lakes West Bald Mountain RA	East Yuba RA Yuba RA Middle Yuba RA
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Response #T216

As discussed under Response T211, old growth is being maintained in several areas on the Tahoe National Forest, including several of the areas you mention. To maintain a diverse forest and meet all the amenity and commodity product demands placed upon the National Forest System the remaining acreage on the Forest is to be managed under the multiple-use premise.

Topic #T217

Second-growth timber should be logged because it fits in mill machinery better than old trees.

Response #T217

While it is true that many mills have been renovated to better process small logs, there are still several mills in this area that are capable of milling large, old-growth logs. We anticipate that this old-growth milling capacity will remain available for many years to come.

Topic #T218

The Forest Service should add to the Plan 'old growth component will be maintained for snag dependent species and for large woody debris recruitment'.

Response #T218

The Forest Plan refers to this subjects in the Standard and Guidelines for Diversity, Snags and Soil Productivity.

Topic #T219

The Forest Service needs to collect more data on wildlife habitat and old growth stands before implementing the Plan.

Response #T219

The Forest Service in Region 5 is currently conducting large scale old-growth studies. As results from the study are known they will be incorporated into the Plan

Topic #T220

I request old-growth education plots for major forest types be reserved at each life zone. I would *also* like to see educational study plots displaying old-growth, middle growth, and pioneer growth for the major forest types reserved in the Tahoe National Forest. One spot I would particularly like to see this is between Bowman Lake and 1-80.

Response #T220

The Onion Experimental Forest which is dedicated to research and is educational in nature has many examples of what you request. In addition to the Experimental Forest, the Tahoe is proposing three areas. The Research Natural Areas (RNA's) have been established to preserve examples of significant natural ecosystems for purposes of research and ecological study RNA's also serve to maintain gene pools and where appropriate to protect habitats for rare and endangered plants and animals. These areas allow excellent opportunities for educational experiences. It is not clear what area you would like to see between Bowman Lake and 1-80 reserved. The three management areas that exist in that area include management prescriptions not emphasizing timber. In fact, the 19,641 acre Grouse management area is reserved for non-vehicular recreation and no scheduled timber management is planned.

Topic #T221

The plan fails to disclose effects of the proposed action and alternatives on vegetation surrounding cultural sites, especially virgin old-growth forests, and fails to provide for preservation of our natural heritage.

Response #T221

The type of effect you are concerned about is addressed at the project level during environmental analysis conducted in compliance with NEPA for the project. The potential for impact to vegetation with cultural significance is low. Historically, timber harvesting and mining have occurred on this Forest Mitigation and monitoring will be used to protect cultural sites.

URBAN/RURAL WILDLAND INTERFACE

Topic #U001

People live next door to Tahoe National Forest and have the following concerns about Forest Service activities. a. preserving the beauty and integrity of the area, b maintaining a healthy environment around private homes by avoiding clearcuts and the use of herbicides; c preventing the devaluation of their property due to adjacent clearcuts; d. avoiding increased fire hazard due to harvesting activities; e. preventing erosion near homes due to clearcutting; f maintaining a quality view from homes when harvest activities are near; g avoiding water contamination from herbicides; h. avoiding traffic accidents on private land due to Forest Service clearcuts; i. impacts on productivity of fish and wildlife habitat; k avoiding economic damage to homes and communities.

Response #U001

Based on the concerns listed above received during the public response period we developed an Urban/Rural Wildland Interface Standard and Guideline to address these concerns. We recognized that where these Urban/Rural Wildland interface situations arise there are many concerns to be addressed and no one single solution or position will satisfy each unique situation. Therefore the Standard and Guideline is more a direction to identify these concerns at the project environmental analysis level, which is conducted in compliance with NEPA, and to develop appropriate mitigation measures to consider during the planning process. See the Urban/Rural Wildland Interface Standard and Guideline 21 in Chapter V of the Plan for more detail.

Topic #U002

People would not have moved to their present property if they had known tree farms would replace existing forests.

Response #U002

Harvesting trees is one of the multiple use activities mandated by Congress in regards to managing National Forests. In the Forest Plan Chapter V, the Urban/Rural Wildland Interface Standard and Guideline 21, there is direction to work with public entities including board of realtors to make them aware of TNF management activities and concerns. It is also the responsibility of people purchasing a home to make inquiries as to what the land uses might be next door

Topic #U003

People are concerned about unrestricted off-road vehicle use on Forest Service lands adjacent to private property

Response #U003

This is a common problem on Forest Service lands especially adjacent to private property. The TNF manages this use by identifying lands where Off Highway Vehicle (OHV) use is Open, Restricted, or Closed. Most of the areas near residences are designated-routes-only to reduce conflicts with residential use. See the Responses under Trails for more detail on how OHV use is managed.

Topic #U004

Tree height buffer zone between Forest Service harvest activity and private property should be adequate to maintain wind, humidity, and other factors which could adversely impact adjoining land.

Response #U004

The Forest Service has a policy of not providing buffer zones between National Forest land and private or governmental agency lands. We have a Forestwide Standard and Guideline 21 in Chapter V of the Forest Plan that directs the Forest to consider the above concerns and to consider appropriate mitigation for these concerns. Due to the complexity of issues, leaving a three tree height zone along a boundary could be a reasonable solution in one case due to slopes, wind, and soil and in another case a big mistake because of insect and disease problems or fire protection concerns. The thrust of the Standard and Guideline is to look at each situation and group of concerns on a case by case basis and develop appropriate responses to each situation.

TOPIC #U005

I am concerned about mining on the Tahoe National Forest and the resultant sedimentation downstream on my property and the resultant damage to the local trout fishery.

Response #U005

All mining activities on National Forest lands are required to have mining plans through special-use permits that outline how they will provide adequate

measures to prevent environmental damages off-site.

TOPIC #U006

Residents of Alpine Meadows are concerned about nearby activities on Tahoe National Forest land such as OHV use, camping, and picnicking, increased traffic and congestion, and decreased water quality.

Response #U006

We recognize the many concerns of Alpine Meadows residents and many other small communities and residences adjacent to National Forest lands. Any plan or project that may effect these kind of situations will identify all the community concerns and consider appropriate mitigation measures or courses of actions that can respond to these concerns.

Topic #U007

People are concerned that the Forest is becoming over used and creating impacts on adjacent private lands.

Response #U007

We will consider this concern on any project that will increase use on the Forest and determine if there are ways to prevent impacts on adjacent private land. In cases of people trespassing, we will identify if there are any facilities existing or proposed that would inadvertently encourage trespassing. If so we will modify such facilities or plans to discourage trespassing.

Topic #U008

People are concerned with privately-owned cattle trespassing on private land.

Response #U008

The TNF works with its permittees to avoid conflicts of cattle and private land owners as much as possible. This is an issue of goodwill for ranchers and the TNF with private landowner. Livestock drifting off their permitted area is considered unauthorized use, not trespassing, and will be handled as outlined by the regulations of the grazing permit on a case by case basis.

Topic #U009

I am partially surrounded by Tahoe National Forest lands and I am worried that the commercial empha-

sis of your Preferred Alternative will be to the detriment of my family and future generations

Response #U009

Part of the TNF Standard and Guideline for Urban/Rural Wildland Interface directs the Forest to work with its neighbors to identify mutual problems and concerns. While we have a mandate to manage for multiple uses including intensive timber management the Standard and Guideline requires an identification of all issues and concerns and a case by case consideration of possible mitigation measures to resolve these concerns.

Topic #U010

There is a concern about ski development near homes that would increase the potential for avalanche.

Response #U010

Any new ski expansion would require an environmental analysis conducted in compliance with NEPA; then this concern would be fully addressed. The analysis of new ski areas would be appropriately documented and would include the above concern along with other identified issues and concerns.

Topic #U011

People oppose logging in areas heavily used by municipal, scout, and "Y" camps.

Response #U011

Those areas with heavy use have been reflected in the sensitivity analysis for the Visual Resource Management System and appropriate visual quality objectives have been developed to meet their visual concerns. Areas of lighter use on private land will be considered on a case by case basis as directed in the Urban/Rural Wildland interface Standard and Guideline 21 in chapter V of the Forest Plan.

Topic #U012

The draft plan allows intensive even-aged management in rural residential areas where private homesteads are intermingled with National Forest System lands (MA 065, 040, and 042). The residents of these areas are vigorously opposed to this land allocation.

Response #U012

The Final Forest Plan addresses this concern through the Urban/Rural Wildland Interface Standard and Guideline developed in response to public com-

ments and concern. Our position *is that intensive* even-aged management is appropriate on highly productive soils. When *Urban/Rural* Wildland interface situations are identified at the project level, an environmental analysis conducted in compliance NEPA would *identify* appropriate mitigation measures. See the *Urban/Rural* Wildland Interface S&G 21 in Chapter V of the Plan for more detail.

Topic #U013

The monitoring and evaluation section of the plan violates 36 CFR 219.7(f) by failing to prepare a program to adequately monitor the effects of National Forest management on communities dwelling near, and within, the Forest boundaries. Effects that must

be monitored include: response to herbicide application, clearcutting, logging to properly boundaries and impacts on community stability.

Response #U013

The present monitoring plan provides adequate monitoring for on- and off-site impacts anywhere on the Forest from herbicide application, clearcutting, and logging. This includes areas next to Forest boundaries. Impacts to community stability are not included in monitoring plans but *are* considered at all levels of planning. See Me Economic Environment and the Social Environment in Chapter 3 of the DEIS/FEIS for details

VISUAL QUALITY

Topic #R110

The Tahoe National Forest should be managed for high scenic quality and the following areas should be considered for careful management.

"Retention" in the foreground, middleground and background.

Highway 49
Highway 89
Highway 20
Interstate 80
Mosquito Ridge Road
Marysville Highway

"Retention" in the foreground and middleground

Pliocene Ridge Road
Hennes Pas Road
Duncan Creek Road
Foresthill Divide Road
Soda Springs-Riverton Road
Finning Mill Road
Big Reservoir Road
Big Trees Road
French Meadows Road
Graniteville Road
Washington Road
Bowman Road
Faucherle Road
Austin Meadow Road
Old Interstate 80
Blue Canyon Road
California Youth Authority Road
Southern Pacific Railroad

Casa Loma Road
Carr Lake Road
Grouse Ridge Road
Big Valley Bluff Loop Road
Eagle Lakes Road
Magonigal Road
Rattlesnake Road
Nichols Canyon Road
Yuba Pass to Webber Lake Road
Lacey Valley Road
Fibreboard Road
Giant Gap Road
Independence Lake Road
Independence Lake Road
Alder Creek Road
Alpine Meadows Road
Brimstone Road
Ralston Road

The following trail Travel Influence Zones should be managed for "Retention" in the foreground, middleground and background

Glacier Lake
Green Valley
Euchre Bar
Italian Bar
Mumford Bar
Beaucroft
American River
Sailor Flat
Five Lakes
Five Lakes Creek
Tinkers Knob
Bear Pen
Bear Creek
Big Springs
Powder Horn
Big Trees-Forest View

Picayune
Western States
Round Lake
Lindsey Lakes
Crooked Lakes
Beyer's Lakes
Loch Leven Lakes
Mosquito Ridge
Warren Lake
Sierra Buttes
Sardine Lake Overlook
Empire Creek
Mt. Lola
Badenaugh
Hell Hole

Manage the following water influence zones and scenic areas for "Retention" in the foreground and middleground

North Yuba River
Bullards Bar Reservoir
Sierra Buttes
Lakes Basin
Lavezolia Creek
French Meadows
Big Reservoir
Sugar Pine Reservoir
Middle Fork American
North Fork of the
Middle Fork American
Eldorado Canyon
Duncan Creek

Grouse Lake
South Yuba River
East Fork Creek
Bowman Lake
Lola Montez Lake
Jackson Meadow
French Lake
Fordyce Lake
North Creek
Cascade Lakes
Paradise Lake
Middle Yuba River

Manage the following areas for Visual Quality Objective (VQO) of "Preservation"

All Research Natural Areas (RNA)
All Special Interest Area (SIA)
All Roadless areas managed for dispersed, primitive, non-motorized recreation
All streamside management zones will be managed to meet a VQO of preservation

Response #R110

Many comments from many letters suggested protecting, upgrading, or improving visual resources on the Tahoe National Forest. The above list indicates the many place names, trails, roads, waterways, water bodies, recreation areas, and general forest areas that the public felt should be managed for scenic values. Based on these public comments, a list was developed to systematically review every place on the Forest and determine whether the proposed VQO's for the area should remain the same, changed to a higher VQO, or dropped to a lower VQO. The factors considered in this review was the Inventoried Visual Quality Objectives (this includes an inventory of Scenic Quality (variety class), Sensitivity levels (peoples concern for scenic quality), and Distance Zones. Other proposed management activities and the potential for conflict or harmony with other managed resources such as timber. Each area was considered, a decision made considering the above factors, and the VQO map and appropriate management area direction changed as necessary. Please review these parts of the Plan to see how any area of interest was treated.

Topic #R111

The short rotation of mixed conifer stands on variety class "B" lands above 5,500 feet will cause major losses to visual quality and therefore it would be wiser to sacrifice some timber volume and maintain these high elevation viewsheds in a natural condition.

Response #R111

Areas of mixed conifer stands on variety class 'B' lands above 5,500 feet have been reviewed. In areas where recreation use was high enough, sensitivity levels caused areas to be assigned a "Retention" or 'Partial Retention' VQO. The remaining areas, although moderate in scenic quality, were assigned a 'Modification' VQO because there was not enough recreation use to justify the drop in timber outputs.

Topic #R112

Mining is compatible with the scenic objectives of the Highway 49 scenic corridor.

Response #R112

Visual Quality Objectives set an expected standard in regards to the amount of visual change considered acceptable for an area. This standard does not in itself determine whether a certain management activity such as mining is incompatible. In most cases there are mitigation measures available that will make mining activities along the 49 scenic corridor or other scenic areas in the forest compatible with Forest Visual Objectives.

Topic #R113

Beauty is in the eye of the beholder. Personally, I can see beauty in even-aged management and see the future healthy forest.

Response #R113

There are many factors that go into the beauty of the Tahoe National Forest and also many attitudes about this beauty as expressed by the public. In a broad sense the Tahoe tries to maintain as much of the natural character of the Forest as possible consistent with providing many resource outputs such as timber. Even aged management is a silvicultural system that allows for the removal and regeneration of trees on the Forest. The regeneration of a healthy stand of trees is an important timber objective and it is a significant contribution to maintaining the overall natural forest character or beauty of the forest over time.

Topic #R114

For economics and ecologically acceptable reasons, harvest in swaths along current roads rather than incur the expense of building new, poor quality, washout prone, and dangerous roads.

Response #R114

The Forest's policy to harvesting along roads varies depending on the kind of road being considered. Along main state highways, Interstate 80, and other roads with high levels of recreation use, the Forest manages for higher visual quality objectives than in the general forest zone. While trees may be harvested along a major State Highway, the visual quality along the highway would be maintained and harvest activities would blend with the natural forest character. Along Forest roads primarily used to harvest timber the public could expect to see an opening up to 40 acres. Even in the general forest, new roads are often necessary to access timber stands; and they are designed to meet safety, and environmental standards to minimize erosion or washout potential.

Topic #R115

Some respondents asked why the TNF presents a false image to people using the roads? If you are cutting down the Forests, people should see it. Other respondents suggested the opposite point of view and suggested the TNF should have buffers along all roads and that they should be wider than they are now.

Response #R115

The broad premise of the Visual Management System is that the majority of people who travel through or visit a National Forest expect a naturally appearing character typical for that region.

Visual Quality Objectives are set for every area of the Tahoe including along roads. The general approach of this system is that where there are many people with a concern for scenery and the scenic quality is high, the Forest should be managed to retain the natural forest character. In this regard along the major State Highways, County roads, and roads with high levels of recreation use, the Visual Quality Objectives are usually 'Retention' or 'Partial Retention' in the foreground. These Visual Quality Objectives intend to retain the natural forest character. Management activities, such as harvesting trees, are not precluded but the activities are required to blend in with the natural forest character. In areas where the main purpose of roads is to access timber, the Visual Quality Objectives allow for more change in the natural forest character and therefore harvest activities are more visible.

Topic #R116

Alternative I would decrease visual quality significantly.

Visual Quality

Response #R116

In the description of environmental effects in Chapter 4 in the DEIS the change in Visual Quality is described under the heading Visual Resources. While various people may have different ideas to what is significant it is true that Alternative I in the DEIS, would show the most evidence of management activities of any Alternative.

Topic #R117

The entire Forest should be managed to maintain high visual quality objectives. Use selective cutting to achieve this goal.

Response #R117

The Forest's goal is to manage the forest for multiple use including visual resources. In general, the Forest tries to meet as high a visual quality objective as possible consistent with providing for other resources and outputs. Selective cuning is one silvicultural practice that is used to help meet high visual quality objectives but it is not the only one. In many cases selective logging, while helpful in meeting visual objectives, is not consistent with silvicultural or other resource objectives and, therefore, other practices such as seed tree, shelterwood, and regeneration harvest systems are used.

TOPIC #R118

Use selective cutting in the vicinity of trails and major back roads in order to retain the ability to harvest without losing the recreation experience. Selective cutting when done correctly should not result in 'highgrading' as referred to in Appendix L.

Response #R118

Selective cutting is one silvicultural practice that can help retain the recreation experience along trails and major back roads. The Forest's approach to this concern is to identify where the recreation experience needs to be maintained and then employ those silvicultural practices to achieve the desired balance between resource outputs and objectives and the maintenance of appropriate recreation settings.

"Highgrading" means removing the large and high valued species from an area and leaving the remaining forest stands in a understocked, often damaged, and low vigor situation. Where the Forest chooses selective logging, it will set clear Objectives that will help avoid the past problem of inadvertently highgrading areas of the forest.

Topic #R119

The existing checkerboard ownership precludes effective visual management.

Response #R119

In some cases the checkerboard ownership pattern has precluded effective visual management of a viewshed area partly in Forest ownership. However, in other cases visual objectives of surrounding neighbors is compatible with Forest Service visual quality objectives. In cases where surrounding neighbors have different management objectives the overall impacts have been considered in terms of setting adopted Visual Quality Objectives on Forest land. Where the visual quality and public use is high enough the Forest has set VQO's of 'Retention' and 'Partial Retention' even when adjacent ownership may manage differently because the areas were deemed worthy of that management. In areas of lower visual quality and public use the Forest has generally set a 'Modification' VQO which generally is consistent with adjacent timber management activities on private land.

Topic #R120

It does not make sense to allocate acres for visual quality except along Highways 49, 89, 20, and 1-80.

Response #R120

While major highway corridors is one criteria for designating adopted visual quality objectives for a certain area there are many other considerations. They include areas of high scenic quality, wilderness and semi-primitive non-motorized areas, recreation use areas, popular bodies of water with high recreation use, and other roads and trails with high levels of recreation use.

Topic #R121

The acreage in retention for Alternative E is extremely high and would do much to reduce the viability of this alternative. It is almost double that in the Initial VQOs and even more than currently exists. For the sake of scenic quality, this would be 'nice': but it appears to be designed to damage the competitiveness of this alternative for being selected. Alternatives F and G do very well in maintaining a high level of scenic quality and have 3 to 3 1/2 times the intensive timber management acres and produce as much as 1 1/2 times as much timber if E had been designed with some of the timber management strategies of F and G and included fish

and wildlife habitat improvement, I expect it might have been superior in Net Public Benefit to A. There is inadequate handling of a true amenity alternative designed to be viable. In alternative E there could be a studied reduction in the retention acres, increase in fish and wildlife habitat improvement and an increase in the timber harvest level. A harvest level of about 150 million board feet could be achieved while still providing a high degree of maintenance of scenic quality.

Response #R121

Your point is well taken in regards to the high levels of VQOs in the Citizens Alternative proposal and is entitled the NMK (Nonmarket) Alternative. Development of alternatives for the FEIS has considered the above points while formulating the alternatives and choosing a final preferred alternative.

Topic #R122

In the preferred alternative, areas adjacent to Granite Chief Wilderness are not blended but are designated as 'Modification' VQO.

Response #R122

Areas adjacent to Granite Chief Wilderness were reviewed by the Forest Landscape Architect and District Rangers to determine if the VQO's were blended properly or not. The review revealed that the only place where VQOs were "Modification" was where the wilderness boundary followed a ridge line. In this case, wilderness users within Granite Chief Wilderness would not be able to view the area where a 'Modification' VQO came up against the wilderness boundary. Eased on this review it was determined that the VQOs were properly blended.

Topic #R123

The new Forest Service Manual 2320 Policy appears to not have been followed. Several river viewsheds lack protection and are shown as 'Modification' VQO.

Response #R123

In the final Plan almost all sections of all rivers have at least a VQO of 'Partial Retention' within the river viewshed. There are a few areas on the Middle Yuba and South Yuba River where a "Modification" VQO remains where timber management will still be emphasized.

Along all major rivers and streams the Stream-side Management Zone (SMZ) will be managed for a 'Re-

ention' VQO based on SMZ guidelines. This level of detail is not shown on the VQO element map

Topic #R124

We would also like you to establish regulations that emphasize the highest standard of Visual Quality Objectives (VQO) in the existing trail corridors and in any proposed trail corridors. We would prefer to construct trails through natural scenic areas rather than through clearcut areas. Coordinated planning with specific regulatory visual quality objectives will ensure that the recreational use of the trail will pre-dominate over timber harvesting efforts.

Response #R124

Most Forest trails receive a 'Retention' or 'Partial Retention' VQO in foreground in general forest zones if the trail receives high public use and is of moderate to high scenic quality. Generally this objective is set for foreground, and with certain trails of high recreation significance this is extended to middle ground. Trails with little recreation use in the general forest can receive a 'Modification' VQO. Even with a 'Modification' VQO, consideration will be given to reducing the impact from management activities and maintaining a reasonable balance of trail amenities such as shade and large trees along portions of the trail corridor. This does not mean that clear cutting will be excluded along the trail corridor but a reasonable balance between harvest openings and trail amenities will be achieved.

Topic #R125

Trails should be protected from the effects of other management activities (e.g. logging and road building).

Response #R125

The specific impacts to the trail tread from logging and road activities will either be protected or replaced after the activity is completed as part of project and contract provisions. The broader visual and recreation effects and how the Forest approaches these concerns is answered immediately above.

Topic #R126

Too much timber is tied up in visual management,

Response #R126

While timber is an important resource output on the TNF, the visual resource is an important aspect to forest management. The TNF provides a scenic backdrop to over 5 million recreation visitors a year

Visual Quality

and is an important aspect to the recreation experience for these visitors. Visual Quality Objectives are set taking in mind the importance of recreation users and their concern for scenic quality, and tries to balance this with the concern for resource outputs such as timber. In most cases timber is not tied up in visual management but rotations are lengthened to ensure that the forest can visually absorb the harvest activities while maintaining a reasonable level of visual quality.

Topic #R127

The Plan de-emphasizes visual quality.

Response #R127

Based on the DEIS/FEIS chapter 4 analysis the plan will drop below the Initial Visual Quality Objectives but will be above the current direction of alternative B. With this in mind the plan emphasizes visual quality along the major state highways, Interstate 80, the views from major waterbodies, and in areas emphasizing semi-primitive recreation and wilderness. Visual quality is not emphasized in the general forest zones where intensive timber management is emphasized. The TNF has adopted a plan that balances the visual resource and other resource needs such as timber as best as possible considering all the competing interests and concerns.

Topic #R128

The Forest should not erect billboards to screen disturbed areas.

Response #R128

The Forest will not erect billboards as suggested in that practice. The Forest never seriously considered such a practice but a previous Landscape Architect tempted by levity or the lack of it in the Plan, slipped the wording in to see if Forest Service staff and the public were reading the Plan. It is reassuring to see that people are reading the Forest Plan thoroughly.

Topic #R129

The Forest should not reduce the quality of view from someone's home.

Response #R129

In setting Visual Quality Objectives for the TNF the view from an individual home was not considered. Areas of concentrated public use including major subdivisions were considered. At the project level the view from a home can be considered and the view may be protected but there is no guarantee that

this can be achieved in areas with a timber management emphasis. Reference to the Urban/Rural Wildland Interface Standard and Guideline in chapter V of the FEIS can indicate the TNF policy in this matter.

Topic #R130

Protect visual quality along streamside management zones.

Response #R130

Visual quality will be protected along streamside management zones by virtue of the SMZ Standard and Guideline in Chapter V of the FEIS.

Topic #R131

Semi-primitive nonmotorized areas should receive a 'Preservation' VQO.

Response #R131

Based on manual and handbook direction semi-primitive nonmotorized areas receive a 'Retention' VQO. 'Preservation' VQOs are reserved for Wilderness Areas, Research Natural Areas and other areas where preservation of ecological processes are the management emphasis.

Topic #R132

Visual quality should be considered as a major Forest resource.

Response #R132

Visual quality is considered a major forest resource.

Topic #R133

In Chapter IV, page 21, the Plan asks under Item 14, 'What priority should be given to managing the scenic values of the Tahoe National Forest? The Plan answers', for the majority of the TNF scenic values would be a low priority. How can we dispense with scenic values in a single sentence?

Response #R133

Your point is well taken. The sentence you have referred to has been replaced in the Final Plan. What the sentence was trying to convey is there are quite a few acres where the scenic quality is not high and the number of viewers low and in those areas scenic values do not have as high a priority. The actual acres indicating priority by Visual Quality Objective is best displayed in the DEIS/FEIS in chapter 4, The

Environmental Consequences under the visual discussion and the accompanying tables.

Topic #R134

In the Casa Loma area I recommend that the Tahoe National Forest seek to have the Southern Pacific wires now degrading the view under-grounded.

Response #R134

The Southern Pacific Railroad owns in fee a strip of land along the whole length of railroad and has total control of management of this land. The TNF can not set planning direction for private lands within the Forest boundary. Individuals with a concern about this issue can contact Southern Pacific directly.

TOPIC #R135

The visual constraints placed on the Henness MA are incompatible and unnecessary.

Response #R135

The visual constraints placed on the Henness Management Area are not incompatible or unnecessary. The predominate VQO for the management area is 'Modification' which is consistent with the intensive timber management emphasis for the MA. A 'Partial Retention' VQO is required for the foreground views from the Fiberboard Road which is a major recreation road access to Jackson Meadows Reservoir and Partial Retention is required for the middle-ground views from State Highways 89 and 49. Both State Highways are designated State Scenic Highways and the 'Partial Retention' VQO in middle-ground is consistent with the scenic values along these highways.

TOPIC #R136

Our interest is in the wise use of renewable resources that balances our customers needs with the Forest's aesthetic and environmental values.

Response #R136

That is precisely the interest or goal of the TNF as manager of National Forest lands. The customer happens to be the American public both local and national.

Topic #R137

Please stop turning our world into a barren wasteland by polluting our beautiful forests with Caterpillar tracks and ugly things.

Response #R137

The TNF recognizes that there are visual and resource impacts due to road building and harvest activities on the Forest. These impacts are documented in the DEIS/FEIS under chapter 4 Environmental Consequences. While there are these expected impacts the TNF has a whole set of Standards and Guidelines to protect the long term environmental and productivity concerns of the forest environment. In other words while a given harvest activity may look quite ugly in the short term when viewed close up, the TNF has standards to minimize soil erosion, protect water quality and temperatures, and requirements to replant these areas so they will be productive forests as soon as possible. The TNF also has Visual Quality Objectives to ensure that visual impacts from any forest activity does not exceed standards for a given area.

Topic #R138

The FEIS must disclose, in a concise form, the effects of the proposed action and alternatives on visual quality. Complete disclosure of effects of each alternative on the future visual quality of the TNF should be provided in chart form. This information must include the Visual Quality Objective status in the fore-, middle-, and background for the following areas:

- a. *Travel influence zones. Travel Influence Zones (TIZ) include all roads and trails.*
- b. *Water influence zones. Water influence zones (WIZ) include all rivers and perennial streams.*
- c. *Special areas. Special areas include areas of high public use (i.e. Loch Leven Lakes; Sierra Buttes).*

Response #R138

The FEIS does disclose, in a concise form, the effects of the proposed action and alternatives on visual quality. The future visual quality of the TNF is provided in chart form by variety class and by acres of foreground and middle ground with background. This information is not listed as requested by Travel Influence Zone, Water Influence Zone or special areas because the charts would become too complex. The equivalent of VQO's for the TIZ's and WIZ's can be compared by looking at the 'Current Management' alternative. Visual quality emphasis for any special area can be identified by looking at that area on the Alternative Themes Map.

Topic #R139

There is no alternative that manages the entire forest to maintain high visual quality.

Response #R139

Alternatives E, F, and G in the DEIS would have managed the forest for high visual quality objectives. In these alternatives there were still several thousand acres of 'Modification' VQO but these acres would not be seen by the average forest recreation user. These alternatives were modified (E) or deleted (F and G) in the FEIS. See the Table 4.24, Visual Quality Index for a comparison of the visual quality for current alternatives

Topic #R140

Visual quality is of such significance that it should be treated as an 'issue' in the planning process. The degradation of visual quality under most of the present alternatives is unacceptable and must be rectified by alternative modifications.

Response #R140

Visual quality has been considered an issue in the planning process and was also identified as a critical issue as part of the process of evaluating public response to the Forest Draft Plan and DEIS. Visual quality has a range of alternatives from a low emphasis on visual management to a high emphasis on visual management.

TOPIC #R141

Other monitoring and evaluation requirements that fail to meet the intent of CFR 219.12 (k)(1) include: A02-312, and B01. These inadequate monitoring programs do not have reporting periods that are immediate enough to be effective or variability standards that are sensitive enough to protect the resources and practices that they measure and evaluate

Response #R141

For A02-312, trend of visual character, the monitoring period is 5 years because the objective is to determine if the desired character stated in the plan for a MA is being approached or maintained. The other monitoring element, visual condition of Forest, measures the more specific concern as to whether visual quality objectives are being met. In the Draft plan this element was to be reported biannually. In the Final Plan the reporting period has been changed to yearly. With the visual Condition being

monitored yearly it is not necessary to have a shorter period for monitoring the trend in visual character. The variability standard for visual condition of the Forest is sensitive enough to protect the visual resource. This standard evaluated yearly should ensure that the trend of visual character is generally on course. The variability standard for trend of visual character is less specific because it is looking for long term trends. If stated goals for visual character are not being met over the long term then these trends away from stated goals can be identified.

For B01 wilderness Area Carry Capacity, your concern is correct in regards to the timeliness of reporting periods. This part of the monitoring plan has been changed to indicate a yearly report of wilderness use and indications of whether the determined carrying capacity is adequate for the wilderness resource. The actual determination of a carrying capacity for Granite Chief Wilderness will be part of the wilderness implementation plan. Details on measuring overuse causing reduction in wilderness values will also be part of the implementation plan.

Topic #R142

There is no discussion or disclosure of viewshed impacts of present management or the proposed action and its alternatives on the Pacific Crest Trail.

Response #R142

The Pacific Crest Trail Management Plan has been incorporated by reference into the Forest Plan. Over all there has not been a significant change in management of the PCT from the PCT management plan to the Forest Plan. Where management area direction in the Forest Plan for visual management is different than the PCT management plan specific direction for the PCT has been spelled out. The PCT management plan will be updated to reflect where there have been changes.

Topic #R143

The statement about visual quality for Alternative I (DEIS, pg. 102) does not seem consistent with the presentation in figure 4.23 (DEIS, pg. 4.97).

Response #R143

The statement about visual quality for Alternative I is consistent with the information presented in figure 4.23. In that there is a high index number for visual condition decline. This matches with the text that indicates that 86% of the Tahoe would have lower VQO's. The visual condition decline is not as great on I as some other alternatives but this is because

the decline index takes into account the amount of drop in the VQO and the number of acres that are dropping in VQO from high levels of Existing Visual Quality.

Topic #R144

The management area direction finds that the area is highly scenic and largely unroaded; that the highly scenic values of this area should be protected; that the wet meadows will require protection from OHV users. I agree with those findings and am then appalled at the management area standards and guidelines selected, including: 1. five-acre clearcuts and even-aged timber management which will permanently and adversely alter the visual qualities and character of the area. 2. new and restored roads which will adversely increase all man-caused impacts on the area, including OHV destruction of the vulnerable wet meadows.

Response #R144

The standards and guidelines you are concerned about will be applied on in those areas where they will meet management area direction. Even-aged management with five acre clearcuts can meet high visual quality standards in many situations and maintain the natural character of the area. New and re-

stored roads may change the roaded condition of an area but man caused impacts can be kept to a minimum. Resource destruction from activities such as OHV use will not be tolerated and necessary preventative steps and enforcement steps will be taken if necessary.

Topic #R145

In response to comments of the visual effects of logging, I would like people to look back at the old pictures of the area around Grass Valley and Nevada City that was harvested for the needs of the people in the mid- to late 1800's and look at it now. There was no major lasting effects of damage to the area and it is already in usable forest again. It is important that we keep all of the issues in perspective and consider the total effect from all the sides.

Response #R145

The fact that new forests are planted and overtime grow back to mature looking forest is a major mitigating factor as to what the visual impact will be in a given proposal for timber removal. With new young trees continuing to grow it allows a sustained yield overtime while still meeting visual quality objectives on the forest.

WATER

Topic #H001

Respondents favor the constraints in the Citizens' Alternative (or similar constraints) to protect watershed values, water quality, riparian areas, stream-side management zones (SMZ). The Citizen's Alternative prohibits logging in SMZ's which range from 100-foot minimum on either side of ephemeral streams to 300-foot minimum on either side of Class II streams and around lakes, to 1/4-mile minimum on either side of Class I streams. It also prohibits grazing in meadow/riparian areas of sensitive streams and establishes buffers of 100-150 feet around meadows. Variations of public comments call for no logging or grazing in SMZ's and/or riparian areas of unspecified width to widths of 100 meters to 1/2-mile.

Response #H001

We have been using Interim Streamside Management Zone (SMZ) Guidelines for the past two years. These include variable-width SMZ's adjacent to intermittent and ephemeral streams, as well as to perennial streams, lakes, and other bodies of water which identify riparian areas as defined in NFMA Regulations - 36 CFR 219.27e. Final Riparian Area SMZ Guides are included as Appendix F in the Final Forest Plan; the Final Guides replace the Interim Guides. Although not as restrictive as those proposed in the Citizens' Alternative, the Riparian Area SMZ Guides generally provide SMZ's with sufficient widths and constraints to protect water quality and other riparian values. One improvement of the Final Guides will be to increase the minimum SMZ width on either side of perennial streams and around lakes to 100-foot horizontal distance to conform with the riparian zone identified in CFR 219.27e.

Timber management will not be prescribed within perennial stream and lake SMZ's (including the minimum 700-foot riparian zone), except to benefit riparian-dependent resources, or for such needs as road crossings and cable corridors; the riparian SMZ zone will be greater than 100 feet where needed to protect riparian-dependent resources. Timber may be harvested in intermittent and ephemeral stream SMZ's subject to the protection of stream channels and the attainment of riparian vegetation and ground cover goals for water quality protection; however, if it is necessary, trees will be retained in these SMZ's to meet water quality goals. Grazing will be allowed in riparian zones subject to the allotment management plan which incorporates specific best

management practices (BMP's) to protect water quality. Exclusion 'buffers' are not designated around meadows because this would inhibit the protect level flexibility needed to manage riparian areas for viable populations of selected wildlife indicator species. However, meadow edges will receive low timber emphasis so that wildlife values can be protected

See Standard and Guidelines (S&G's) 46 and 47, and Plan Appendix F, for detailed direction for the management of SMZ's and riparian areas. See S&G 30 for detailed direction for the management of meadow edges.

Topic #H002

Stream-side Management Zones (SMZ) widths need to be adequate. A 100-foot SMZ is too arbitrary. Often greater than a 100-foot SMZ is needed to protect riparian values. This includes intermittent and ephemeral streams.

Response #H002

We agree. Forest Riparian Area/SMZ Guides (Appendix F of the Final Forest Plan) incorporate variable-width SMZ's which will be a minimum of, but may often be greater than 100 feet along perennial streams. SMZ's will also vary adjacent to ephemeral and intermittent streams, but can be less than 100 feet wide in many situations.

Topic #H003

Riparian areas need protection.

Response #H003

We agree. National policy is to minimize impacts to riparian areas. Various direction is exemplified by Executive Order 17990 (Protection of Wetlands), NFMA Regulations (CFR 219.27e), and the Forest Service Manual. More specific guidelines include S&G 46, BMP's specific to riparian areas (in Appendix E of the Forest Plan), and Appendix F of the Forest Plan.

Topic #H004

Standard and Guideline (S&G) EC7w should limit regeneration clearcutting in SMZs. Sanitation, selection, and salvage prescriptions should apply in SMZs

Response #H004

Practice EC7w has been replaced by S&G 46 and Appendix F in the Final Forest Plan. In essence timber harvest will not be allowed in perennial stream SMZ's and riparian areas (which includes a minimum 100 feet horizontal distance on either side of perennial streams, and around lakes and other bodies of water) unless it is to benefit riparian dependent resources, or for such purposes as road crossings. Regeneration harvesting may be allowed in SMZ's adjacent to ephemeral and intermittent streams to the extent that this and post-harvest activities do not prevent the attainment of SMZ ground cover goals and the protection of stream channels and riparian vegetation.

Topic #H008

Exclude mining, new campgrounds, and/or OHV's from riparian zones.

Response #H008

Mining on National Forest system lands is governed by various Federal regulations applicable to three categories of minerals; locatable, leasable, and saleable. The Forest must respond to mining proposals through the EA process and the development of Plans of Operation (36 CFR 228) for specific projects. This is the mechanism used to incorporate specific mitigation measures (BMP's) needed to protect riparian dependent resources. See Response W011 and the Final SMZ Guides (Plan Appendix F) regarding the location of campgrounds and other recreation facilities in riparian areas. See Response W012 and Plan Appendix F regarding OHV use in riparian areas.

Topic #H009

Logging debris accumulated in riparian zones will affect downstream reservoirs and water uses when released during peak flows.

Response #H009

A specific Best Management Practice and a standard contract clause require the removal of harvest-induced debris from streamcourses.

Topic #H010

Consider visual quality in stream-side management zones (SMZ).

Response #H010

We agree. Visual quality is recognized as one of the major resource values associated with riparian areas and SMZ's Forest Service Manual (FSM) 2526, FSM 2532 and Forest Service Handbook (FSH) 2509.22 include visual quality in the determination of stream classification and subsequent SMZ determinations and constraints

Topic #H011

There is a need for a specific Standard and Guideline (S&G) for riparian protection, including specific constraints for logging, grazing, and construction.

Response #H011

Standard and Guideline 46 and Plan Appendix F specify constraints for riparian protection. There are also many Best Management Practices (BMP) that address protection of riparian areas from logging, grazing, and construction. BMP's are referenced under 'Water' in Chapter II of the AMS and Chapter 3 of the DEIS/FEIS, and in S&G 50; they are listed in Plan Appendix E.

Topic #H012

'Riparian' should be defined more liberally, include riparian plant species as a riparian dependent resource.

Response #H012

The inclusion of riparian plant species as a riparian dependent resource is recognized as per FSM 2526 policy and definitions.

TOPIC #H013

Manage riparian zones with an emphasis on watershed and wildlife over commodities as per NFMA.

Response #H013

Refer to Responses H001 and H004, and to S&G 46.

Topic #H014

An inventory of riparian areas and an appraisal of riparian conditions are needed.

Response #H014

The Forest LMP data base includes acreage data for 'wetlands' (riparian areas as defined by Aquoll, Boroll, and Cryumbrepts, wet soils), and for SMZ's adjacent to perennial streams. This information has been entered for individual capability areas (CA's) and can be summarized by watersheds, compart-

Water

ments, and management areas (MA's); wetland acres have already been summarized by MA and the estimated acres are included under Section "I. DESCRIPTION" of each MA direction write-up in Chapter V of the Draft FP. There is as yet no detailed appraisal of riparian conditions on the Forest as this is a very large undertaking. There is a cursory analysis of channel conditions.

Topic #H015

Limit logging to one side of streams.

Response #H015

We agree that logging should be limited to one side of a stream if possible and this is emphasized in the Riparian Area/SMZ Guidelines (Final Forest Plan Appendix F). It is recognized however that there are some situations where logging both sides of a stream will result in lower overall environmental impacts; for example it may be preferable to log both sides of a particular stream on cable ground if this eliminates the need to construct a road on sensitive lands to access the opposite slope.

Topic #H016

The respondent proposes very specific Stream-side Management Zones (SMZ) for a long list of specifically identified streams and stream segments on the Forest. This includes SMZ's generally between 100-600 feet, with absolutely no logging within the first 100 feet and varying amounts of partial cutting beyond that. A type A-E stream classification system is presented (refer to Topic 063 for the detailed proposal)

Response #H016

The constraints noted in Response H001 and in the Final Riparian Area/SMZ Guides (Plan Appendix F) provide adequate protection to the specifically identified streams. Minimal activity is planned within a 100 ft. to 300ft. zone adjacent to either side of these streams.

Topic #H017

Why does Prescription #9 have unsuited Stream-side Management Zones (SMZ)?

Response #H017

Prescription 9 applies only to the 12,164-acre Carman Valley Watershed under Alternatives A, C-K, and to 79,140 acres including Carman Valley and Water Influence Zone areas under Alternative 6. The SMZ's in the Carman watershed are unsuited because this

drainage is in a severely deteriorating state, and management emphasis here is for watershed protection and restoration. The SMZ's in the Water Influence Zones are unsuited since under existing direction (Alternative B) these areas are recognized as having high recreation values

Topic #H018

The respondent states that there are inconsistencies in riparian area acres.

Response #H018

We do not agree that there exists a discrepancy concerning riparian areas in the DEIS, starting on page 3 57. First, there are an estimated 90,900 acres of riparian areas not accounting for overlap or duplication of acres; this includes 13,100 acres of aquatic ecosystem, 32,000 acres of riparian ecosystem/wetlands, 4,600 acres of floodplan, and 41,200 acres of SMZ's. Next, in this same section there is the recognition that there is some overlap or duplication of riparian ecosystem/wetlands acreage and SMZ acreage, and also the statement that the floodplan acres (4,600) are also totally included in the SMZ acreage. When subtracting this duplication from 90,900 acres, there are close to 85,000 acres of riparian areas on the TNF.

Topic #H019

The Wildlife Alternative damages riparian areas.

Response #H019

Due to the large amount of regeneration acreage and road building associated with the wildlife alternative, the potential to adversely impact riparian areas is greater than in the amenities alternatives; however, implementation of BMP's (Plan Appendix E) and Final Riparian Area/SMZ Guides (Plan Appendix F) should minimize possible damage to acceptable levels.

Topic #H020

Rock Creek was heavily impacted in spite of the Stream-side Management Area (SMZ) along it in the Nature Trail area

Response #H020

We agree, as did the Central Valley Regional Quality Control Board, upon a field review of this SMZ. The problem here was not the concept of SMZ's for protection of water quality, but that the SMZ protective measures were not implemented.

Topic #H021

Water quality protection is inadequate. Management emphasis should shift from commodities to watershed protection and water quality.

Response #H021

All alternatives must implement minimum management requirements and other mitigation measures (BMP's) to meet watershed protection goals as stated in the 1897 Organic Act and the Clean Water Act and Amendments. BMP's are discussed in more detail under "Water" in Chapter II of the final AMS document and Chapter 3 of the DEIS/FEIS and in S&G 50; they are listed in Plan Appendix E. The preferred Alternative presents a reasonable balance of various commodity and amenity outputs and values while meeting all resource protection goals.

Topic #H023

All-aged management or selection cutting without herbicides is favored to protect water quality. Clearcutting is opposed in order to protect fisheries and water quality.

Response #H023

The application of BMP's will protect water quality and fisheries as a result of timber harvest-related activities. There are nearly 100 BMP's, most of which address timber harvest, associated road construction, and site preparation. These are referenced under "Water" in Chapter II of the final AMS document and Chapter 3 of the DEIS/FEIS; they are listed in Plan Appendix E. Seven of these BMP's specifically address the application of herbicides.

TOPIC #H024

Why are there fewer acre-feet of water meeting standards under Alternative E than Alternative A?

Response #H024

First, it is understood that Alternative A produces more runoff since there is substantially more clearcutting under this alternative than under Alternative E, the amenities alternative. Second, it is expected that the possibility of water quality not meeting standards is greater where more intensive management is practiced, even assuming diligent implementation of BMP's. Thus, it is expected that Alternative A will have a possibly slightly lower 'percentage' of the Forest's overall runoff meeting standards. When combining the two factors, it is believed that the increase in total runoff under Alternative A

relative to Alternative E is only partially offset by the amount of additional water possibly not meeting standards under Alternative A. The net difference is the additional water meeting standards water under Alternative A compared to Alternative E.

Topic #H025

Protect water quality in Independence Creek, Grizzly Creek, and/or Empire/Lavezzola Creeks.

Response #H025

Refer to Response H023. Also, it is expected that the upper four miles of Lavezzola Creek, which is in the Sunnyside Management Area, will receive added protection since the management emphasis for this area is to retain a predominantly natural landscape and to provide for dispersed recreation. Timber management would be de-emphasized here using special cutting practices.

Topic #H026

There is a concern for poisoning our drinking water.

Response #H026

Refer to Response H023.

Topic #H027

Increased grazing impacts water quality; reduced grazing is needed to protect water quality.

Response #H027

Grazing is allowed on National Forest system lands subject to specific allotment management plans for given areas. These plans incorporate specific BMP's to protect water quality. BMP's are implemented by the range permittee in cooperation with the Forest representative.

Topic #H028

The lack of baseline data in the Plan violates Federal and State laws.

Response #H028

We disagree. The Forest must make reasonable efforts to acquire sufficient data to formulate and analyze alternatives in the planning process. Water quality data by itself would not serve that purpose. It should be added however, that there is a certain amount of existing water quality data that the Forest uses as background data. For example the Desert Research Institute (DRI) in Reno has collected a wealth of data on the tributaries to the Truckee and

Water

Little Truckee Rivers. There is limited existing data on the west side of the Forest (Sacramento River drainage), for instance some baseline data exists for the North Fork American Wild River, Macklin Creek, Deer Creek, and for some of the Grouse Lakes. For the most part west side base line data would need to be collected as warranted by a particular project. It should be noted that Chapter VI of the Forest Plan identifies monitoring needs relative to BMP's; this would entail the gathering of a certain amount of baseline data.

Topic #H029

Best Management Practices (BMP's) need to be implemented to protect water quality.

Response #H029

We agree. This is National Forest policy. See 'Water' in Chapter II of the final AMS document and Chapter 3 of the DEIS/FEIS, S&G 50, and Plan Appendix E.

Topic #H030

Discuss assumptions regarding alternatives that result in increased water yield at the same time water quality remains unaffected.

Response #H030

Refer to Responses H021, H023, and H024.

Topic #H031

Identify specific Best Management Practices (BMP's) to protect water quality; discuss the BMP handbook and its current revision; discuss the fact that BMP's may not always be effective. Also, note that Regional Water Quality Control Boards can still intervene where BMP implementation was inadequate to protect water quality.

Response #H031

BMP's have been included by reference under 'Water' in Chapter II of the final AMS document and Chapter 3 of the DEIS/FEIS, and S&G 50; they are specifically identified in Plan Appendix E. It is recognized that BMP's may not always be correctly implemented and it is recognized that some BMP's may be of questionable effectiveness. It is for these reasons that the Forest Service has agreed to continuously monitor both the effectiveness of BMP implementation, and the technical soundness of specific BMP's. This commitment is included in the BMP handbook alluded to, titled 'Water Quality Management For National Forest System Lands In California' and in Chapter VI of the Draft and Final FP. It is true that

Regional Water Quality Control Boards have the authority to intervene where BMP implementation did not adequately protect water quality, this is recognized in the Management Agency Agreement (MAA) between the Forest Service and the State Water Resources Control Board governing implementation of BMP's on NFS lands; this MAA is also mentioned in the final AMS document and Chapter 3 of the DEIS

Topic #H032

Alternatives E and B are preferred to protect watersheds.

Response #H032

Refer to Response H021. Alternative E was modified to include the provisions of the Citizen's Alternative; it is entitled the Nonmarket (NMK) Alternative in the FEIS. Alternative B has been analyzed in the FEIS as the Current (CUR) Alternative

Topic #H033

There are concerns with impacts to water quality from herbicides. Guidelines to protect water from runoff and drift, the methods of pesticide storage and transportation etc. should be discussed. Also potential impacts should be identified and a monitoring plan presented.

Response #H033

Refer to Response H023. The Seven pesticide BMP's specifically address guidelines to protect water from runoff and drift, monitoring, and such things as handling, cleaning, and disposal of pesticide containers. These BMP's are referenced under 'Water' in Chapter II of the AMS and Chapter 3 of the DEIS/FEIS, and in S&G 50; they are listed in Plan Appendix E. In addition to this, the Forest Service must comply with all State regulations.

Topic #H034

The Plan needs to consider the Lahontan Board's and State's non-degradation policy and water quality degradation expectations in relation to this policy.

Response #H034

In Chapter 3 of the DEIS/FEIS under 'Water' it is stated that all private and public entities (including the Forest Service) must comply with the requirements and provisions of the North Lahontan and Central Valley Regional Water Control Board Basin

Plans These Plans incorporate the State's non-degradation policy. Concerning water quality degradation, it is expected that all alternatives will meet State water quality goals since certain minimum management requirements relating to riparian areas and soil cover must be implemented, and since BMP's must be implemented.

Topic #H035

There is a concern about erosion causing landslides, avalanches affecting the ski season, and pesticide poisoning.

Response #H035

Erosion does not cause landslides; landslides are a catastrophic form of erosion and have more to do with inherent land stability than with soil erodability. Avalanches as they may affect the ski season are beyond the scope of this plan and are best addressed at the project level of planning. Pesticide poisoning concerns are believed mitigated by seven specific pesticide BMP's (see Responses H023 and H033)

Topic H036

There is a need for research findings on sediment and turbidity values.

Response #H036

We agree. This need is identified in the 'Water section of Chapter II of the Analysis of the Management Situation (AMS) document. However, it should be recognized that research in this area is best undertaken by other entities such as National Forest research stations, universities, the U.S. Geological Survey, and the State Water Resources Control Board.

Topic #H037

Water quality objectives for sediment and turbidity are needed; where will timber cutting and other practices cause exceedence of standards?

Response #H037

Water quality objectives currently exist for sediment and turbidity in Regional Water Quality Control Board Basin Plans, which are referenced in Chapter 3 of the DEIS/FEIS. As noted in Response H036 however, research is needed to refine these values. Timber cutting and other practices could cause exceedence of standards wherever BMP's are not properly implemented.

Topic #H038

Sediment models are needed for the Sierras.

Response #H038

This is desirable in the long run but is beyond the scope of this plan. It is an area that needs to be addressed by research institutions. It should be noted that soil resource inventories have recently been completed for most of the Sierras and this is a valuable step in the process to develop sediment models.

Topic #H039

A worst case analysis is needed for an erosion/ sedimentation catastrophe on water and fish resources.

Response #H039

We do not have the necessary information to complete such an analysis for this level of planning. As noted in Responses H038 and H040, there are no credible sediment models for this part of the Sierras which would be useful for deriving sediment values. However, it is believed that this concern is indirectly addressed by the evaluation of cumulative watershed effects (see Responses H050 through H054).

Topic #H040

A sediment yield analysis is needed for roadless areas where road building is scheduled

Response #H040

Since credible sediment models are not currently available for the Sierras, it is not possible to do a sediment yield analysis in roadless areas or elsewhere.

Topic #H041

There is need for an inventory and analysis of the physical, chemical, and biological water quality of high priority streams.

Response #H041

Refer to Response H028.

Topic #H042

What are the management directives and environmental circumstances that have created or preserved 'very good' ratings for riparian zones and water quality?

Water

Response #H042

Past timber management did not emphasize intensive management as exemplified by regeneration cutting and attendant practices. Most of the water quality problems to date were a result of old hydraulic mine sites which have not yet stabilized and to a certain amount of erosion from roads.

Topic #H043

There is a concern that DEIS Table 2.17 projects a decline in the amount of water meeting standards over the 50 year planning period.

Response #H043

The figures in DEIS Table 2.17 are misleading unless understood in context with water yield. As noted on page 2.114 of the DEIS, the percent of water yield meeting standards is expected to remain the same as current levels or slightly improve for all alternatives except Alternatives D and I which are high commodity alternatives. It should also be noted that for most alternatives total water yield is generally greater in the earlier decades and declines later in the 50 year planning period. This is in direct response to the amount of acres regenerated, which are generally greater in the earlier decades. This explains why although the absolute yields of water meeting standards slightly decline in later decades, the 'relative' amounts meeting standards aren't expected to decline.

Topic #H044

The water quality implications of type conversion should be detailed, including potential impacts from sediment, nutrients, and herbicides.

Response #H044

The water quality implications of type conversion are very similar to those associated with regeneration cutting followed by site preparation and brush control. Both activities have the potential to impact water quality if BMP's are not properly implemented. There are 14 State Water Resources Control Board approved BMP's which specifically address vegetative manipulation including type conversion and use of pesticides. These are included by reference in Chapter II of the AMS, Chapter 3 of the DEIS/FEIS, and S&G 50. They are listed in Plan Appendix E.

Topic #H045

Discuss short-term versus long-term water quality effects from soil degradation. If watershed damage

is indicated during plan implementation, the Forest should slow the rate of the activity causing the damage or implement more stringent standards and guidelines.

Response #H045

The 'Water' sections of Chapter II of the final AMS document and Chapter 3 of the FEIS discuss short term and long term water quality effects from soil degradation. Concerning watershed damage encountered during plan implementation, refer to Response H057, also refer to Response H031 concerning Forest Service and Regional Water Quality Control Board responsibilities in this regard.

Topic #H046

Coordinate beneficial use definitions with those in Regional Water Quality Control Board Basin Plans.

Response #H046

It is our belief that there are not any apparent discrepancies between definitions used by the Forest Service and the Regional Boards. Forest Service acceptance of Regional Board definitions is stated under 'Water' in Chapter II of the final AMS document, and implied by reference under 'Water' in Chapter 3 of the DEIS/FEIS where it is noted that the Forest Service must comply with requirements and provisions of Basin Plans.

TOPIC #H047

Acid rain is destroying forests. Acid rain is not discussed in relation to 1) water quality and wildlife, and, 2) resistance or lack of it to acid rain in relation to "monocultures."

Response #H047

The acid rain problem is beyond the scope of this plan. Normal National Forest activities do not influence acid rain. As noted under the Air Quality discussion in Chapter 3 of the DEIS, the sulfur content of forest fuel (slash) is negligible, as is nitrogen oxide production from burning slash.

Topic #H048

Alternative A allows management while protecting water quality.

Response #H048

Refer to Response H021.

Topic #H049

What is the potential for open pit mining and processing to degrade watersheds and streams?

Response #H049

Refer to Response H008. Assuming the procedures noted there are not followed, and BMP's are not implemented, then open pit mining could result in degradation of watersheds and stream conditions.

Topic #H050

Cumulative watershed effect limits have not been established for individual watersheds. What are interim dispersal pattern criteria?

Response #H050

Cumulative watershed effect (CWE) thresholds are to be developed in concert with other (Sierran) forests. This is presently being actively pursued. The Forest's interim policy is to use thresholds toward the conservative lower-to-middle end of the range of thresholds or CWE limits being used on the other Forests with developed thresholds.

Topic #H051

A cumulative watershed effect (CWE) analysis needs to be done before implementing the Forest Plan. This should be by specific watershed.

Response #H051

A forestwide CWE analysis was performed. Its main value is to display relative CWE impacts by alternative. It is felt that doing the CWE analysis for specific "major" watersheds would not be of much more value than for the Forest as a whole. This is so since the methodology and thresholds of concern (TOC's) are designed for use with "small" watersheds, ideally 500 to 2000 acres. Since there are hundreds of these second and third order watersheds, and the refined information needed to do a reliable CWE analysis for this size watershed is not available at the Forest planning level, the results would lack usefulness and credibility. This is the reason that the Forest direction is to pursue detailed CWE analyses at the project level pursuant to S&G 43. Analyses at this level will consider historical harvest/silvicultural activities, uncut sales under contract including extensions and buyouts, and planned activities.

Topic #H052

What is the degree of water quality degradation from individual and cumulative forest practices?

Response #H052

This is very difficult to predict even at the project level. Many assumptions must be made, for instance regarding implementation of BMP's. We do know that the 'potential' of water quality degradation is directly proportional to the amount and intensity of land management activities.

Topic #H053

Cumulative watershed effect (CWE) analyses should include private land.

Response #H053

National Forest policy is to consider private land in all CWE analyses as per the Regional methodology referenced in Chapter 3 of the DEIS/FEIS and S&G 43. Current Forest Service strategy is that management activities be applied on a percentage of land ownership basis, thus proportioning the amount of disturbance that can be contributed by any one ownership. In some watersheds of mixed ownership where coordination with other land owners is not possible, and where planned activities may exceed acceptable conditions, there are options available to address CWE's. Options used are to defer activities, and to mitigate impacts by application of watershed rehabilitation activities which in essence "buy" or create available disturbance units (equivalent road acres or ERA's) elsewhere in the watershed.

Topic #H054

Describe cumulative watershed effect (CWE) procedures, criteria, and thresholds. Also, what is the CWE link to water quality? Also, there should be a discussion that compares alternatives and shows why Alternative A causes impacts as high as Alternative H.

Response #H054

CWE procedures, criteria, thresholds, and the link to water quality are addressed in detail in the Regional methodology referenced in Chapter 3 of the DEIS/FEIS and S&G 43. There is a comparison of CWE's by alternative under 'Water' in Chapter 4 of the DEIS/FEIS; the reason Alternative A CWE's are similar to those for Alternative H is that both alternatives result in similar amounts of road construction and acres regenerated.

Topic #H055

Select an alternative that minimizes cumulative watershed effects (CWE).

Response #H055

Even though the preferred alternative does not result in the lowest equivalent roaded acre (ERA) value (i.e. smallest CWE), it is believed that this alternative will meet water quality goals due to the mitigations noted in Response H021 and the application of S&G 43.

Topic #H056

An interim cumulative watershed effect (CWE) threshold of concern (TOC) is needed.

Response #H056

Refer to Response H050.

Topic #H057

There is a question whether water quality monitoring will be carried through in the Forest Plan, with follow-up changes in Forest management if needed.

Response #H057

Monitoring is required by both NEPA and NFMA. The intensity of water quality monitoring that is identified in Chapter VI of the Draft FP that is actually performed is partly dependent on dollar and personnel resources allocated for this. If warranted, follow-up changes in Forest management will be made as per NEPA and NFMA direction.

Topic #H058

A citizen's water quality monitoring group is suggested.

Response #H058

We support the concept of a citizen's water quality monitoring group. This could complement the Forest's monitoring efforts.

Topic #H059

There is a wish to review water quality monitoring results in the Lahontan Board area of concern.

Response #H059

Monitoring results are public information. Requests for this information are welcome.

TOPIC #H060

There is a need for a detailed monitoring program for riparian areas, and for specific Best Management Practices (BMP) monitoring guidelines, methods, schedules, costs, etc.

Response #H060

These would be developed pursuant to adoption of the Forest Plan and the allocation of resources to conduct the monitoring. See Table VI 1 in Chapter VI of the DEIS for 'Water Quality Parameters and Indicators' to be measured.

TOPIC #H061

There is a need for monitoring and enforcement of stream-side management zone (SMZ) protection associated with burning.

Response #H061

The protection of SMZ's is recognized as one of the most important BMP'S so that monitoring their protection from burning would receive a very high priority. Refer to Response H060.

Topic #H062

There are needs for continued water quality monitoring associated with herbicide applications, and for monitoring of acid rain in lakes.

Response #H062

Water quality monitoring associated with herbicide applications has received the highest monitoring priority in the past. It is expected that this commitment will remain. Since National Forest activity contributions to acid rain are negligible, the Forest will not take a lead role monitoring for acid rain, Forest Service efforts will continue to be in a supportive role for the EPA as exemplified by the Western Lake Survey conducted in 1985 as part of the National Surface Water Survey (NSWS).

Topic #H063

The implementation of Best Management Practices (BMP'S) and the results of monitoring should be documented in order to study site-specific results and general effectiveness of BMP'S.

Response #H063

Part of the water quality monitoring envisioned in Chapter VI of the Forest Plan includes the documen-

tation of monitoring results in internal reports. Reports will be available to the public.

Topic #H064

Management that optimizes water yield and/or timing of flows should be favored. The Forest needs a stronger water resource management policy in this regard; this policy should include coordination of timber harvest, reforestation, fuels management and range improvement.

Response #H064

As noted in Chapter 3 of the DEIS/FEIS and in the AMS document, water yield increase is mainly an incidental consequence of regeneration cutting. It will continue to be so subject to limiting factors such as silvicultural needs, visual impacts, the need to protect riparian zones, and the need to protect water quality and maintain channel stability by preventing undesirable increases in peak flows. Practice F2 allows for activities resulting in permanently increasing water yields in certain situations. Timing of flows will be improved where possible per Practice F3, again subject to other resource needs.

Topic #H065

Alternative I maintains water quality while increasing water yield

Response #H065

This alternative must implement **BMP'S** as do all alternatives. However, this alternative is not the best balance of all resources. Being the highest commodity scenario, Alternative I also has the greatest "potential" for water quality degradation in case of improper application of **BMP'S**. We feel that water yield increase potential is minor when compared with the mandate to protect water quality and also due to downstream water storage limitations.

Topic #H066

Cloud seeding may result in flooding.

Response #H066

Cloud seeding is not a National Forest-initiated activity. Where it has occurred on National Forest lands is for research purposes (conducted by other agencies) and where certain utilities or irrigation districts have sought to increase inadequate snowpacks. Since seeding is normally done during below nor-

mal precipitation years, the dangers of associated flooding are minor.

Topic #H067

Increased flooding may result from water yield improvement practices, clearcutting, and/or Alternative A.

Response #H067

The diligent application of **BMP'S**, including cumulative watershed effect (CWE) analyses for individual projects, is intended to minimize both water quality impacts and the in-channel and downstream effects of increased runoff.

Topic #H068

There is a concern that water yields not be decreased so that irrigation districts can meet their delivery obligations.

Response #H068

None of the alternatives results in water yields below recent historical levels.

Topic #H069

Due to intensified management, watershed restoration needs more future emphasis.

Response #H069

The preferred alternative calls for the ultimate restoration of about 1900 acres of eroding lands (Chapter 2 of the DEIS/FEIS). These are the highest priority lands for restoration and include meadows, roads, and hydraulic diggings (see Practice F1 and S&G 45).

Topic #H070

The Watershed Improvement Needs (WIN) inventory should be completed.

Response #H070

We agree this is needed. The Region is presently finalizing guidelines for conducting the WIN inventory. Implementation will begin in the 1989 field season.

Topic #H071

What is the potential for a restoration program, such as removal of roads and facilities?

Response #H071

Refer to Response H069.

Topic #H072

A Watershed Improvement Needs (WIN) list should be included. Improvement of watersheds in a poor condition should be a Forest priority

Response #H072

We have a preliminary WIN inventory in our planning files; this is referenced under 'Water in Chapter II of the final AMS document and Chapter 3 of the FEIS. Concerning improvement of watersheds in a poor condition, refer to response H069. In addition to restoration work, other disturbed lands will be aided in recovery by limiting management as addressed by S&G 44.

Topic #H073

There are concerns with depletion of water due to vegetative cover loss, and with disruption of perched water tables.

Response #H073

Vegetative cover loss is normally associated with increases in, rather than depletion of, water yield. Perched water tables are not common on the Tahoe NF. Where they do occur the primary concern is from road construction; Forest policy is to avoid disrupting them through proper road location.

Topic #H074

An inventory of Forest activities which may impact groundwater is needed.

Response #H074

The main activities which have the potential to impact ground water are the application of persistent herbicides and waste disposal associated with developed recreation sites. Refer to Responses H075 and H079 for further discussions.

TOPIC #H075

Describe the effects of herbicides, pesticides, and fertilizers on groundwater

Response #H075

The potential effects of pertinent chemicals on various resources is displayed in a risk analysis which is part of the February, 1989 'Vegetation Management for Reforestation' FEIS. It includes a detailed

account of pesticide mobility and persistence in soils

Topic #H076

Define what constitutes a 'serious and adverse' impact on groundwater.

Response #H076

We consider a 'serious and adverse' impact on groundwater as any violation of water quality objectives stated in the Regional Water Quality Control Board Basin Plans. These Plans are referenced under 'Water in Chapter II of the AMS document and Chapter 3 of the DEIS/FEIS

Topic #H077

An inventory and map of groundwater resources is needed, showing distances of aquifers from polluting activities such as mining.

Response #H077

Except for the two major groundwater basins discussed in the AMS document and in Chapter 3 of the DEIS/FEIS, there are no other known basins. Other ground water resources are identified by individual wells which are not tapping known common aquifers; we do not maintain well records but have noted in the AMS that they are available at appropriate state agencies. There are no known polluting activities that are affecting these groundwater sources.

Topic #H078

A plan is needed for systematic monitoring of groundwater.

Response #H078

A specific BMP calls for routine monitoring of National Forest domestic groundwater developments (e.g. wells at developed campgrounds) according to State and local regulations.

Topic #H079

What are the methods for locating wells and developing springs to obtain water, and for protection of groundwater from contamination by septic tanks, RV effluent, and chemical applications?

Response #H079

A specific BMP addresses the placement of sanitation facilities for the purpose of protecting surface and ground waters from contamination. Water devel-

opments and sanitation facilities are located relative to each other under strict compliance with State and local Health Department regulations

Topic #H080

Water is important for hydro-electric power and hydro-electric power should be included as a riparian area 'dependent resource.'

Response #H080

The Forest Service Manual (R-5 Suppl 41 11/86) defines riparian area dependent resource as "those natural, intrinsic resources directly dependent upon the riparian area for their existence, including: water, fish, certain wildlife species, riparian related aesthetics, and riparian related vegetation" (emphasis added). The definition for non-dependent specifically includes as examples developments such as boat docks and mining (including placer) From this we conclude that hydro-electric power is not a natural intrinsic resource, but is a development that is associated with water like boat docks, and thus is not properly considered a riparian dependent resource.

Topic #H081

Complete and maintain the Water Uses Inventory.

Response #H081

The Forest water uses inventory is complete and in the planning records.

Topic #H082

There is need for an inventory of non-consumptive instream flow needs of high priority streams.

Response #H082

Instream flow determinations are very time consuming and are only performed on a case-by-case basis in response to specific project proposals such as hydro-electric or mining projects; the analyses are included with project EA's. As noted under "Water" in Chapter II of the AMS document, due to current water shortages it is likely that the Truckee/Little Truckee River watershed will be adjudicated; these rivers and their tributaries are thus high priority for instream flow determinations

Topic #H083

A detailed meadow management prescription is presented for inclusion in the Final Plan.

Response #H083

The suggested standards and guidelines for meadows are addressed in Response H001 and S&G's 29 and 30

Topic #H084

Detailed changes and clarifications are requested for the Forest Interim Streamside Management Guidelines (SMZ) Guidelines

Response #H084

The suggested changes and clarifications are addressed in Chapter II of the Final AMS, Chapter 3 of the FEIS, Chapter III of the Final FP, S&G's 46 and 47, and Plan Appendix F.

TOPIC #H085

Maximum vegetative diversity will best protect water quality, by preventing erosion and by absorbing precipitation thus preventing flooding at lower elevations.

Response #H085

Vegetative crown closure and the composition of ground cover, not species composition, are the key variables in preventing erosion and controlling runoff.

Topic #H086

Selective cutting should not be allowed near waterways. Water systems should not be affected during logging operations.

Response #H086

See Response H001 for a discussion of cutting near streams. Concerning water systems, there is a timber sale contract clause which requires the identification and protection of water systems. If the development is damaged the purchaser is required to repair it to its original condition.

Topic #H087

Water rights and impoundment facilities are not given proper consideration.

Response #H087

Water rights are addressed in detail under "Water" in the AMS document and in less detail under "Water" in the DEIS/FEIS. Impoundment facilities are discussed in detail or by reference under "Facilities" and "Water" in Chapter II of the AMS document and in Chapter 3 of the DEIS/FEIS. See S&G's 48 and 49

for USFS direction for securing water rights and for responding to non-Forest Service proposals.

Topic #H088

The DEIS is lacking in information about the effects of road construction and timber harvesting on water quality.

Response #H088

The link between road construction and timber harvest and potential water quality impacts is noted under 'Water in Chapter II of the AMS document and in Chapter 3 of the DEIS/FEIS. Substantial literature is also available that addresses this. The link is also implied in the recurrent mention of BMP's, which address roads and logging (for example as noted in Response H011). Chapters 2 and 4 of the DEIS discuss the relative effects on Water quality from various alternatives; in essence these relative differences are predominantly due to timber harvest related activities, including roads.

Topic #H089

Seeps, springs, riparian areas, moist meadows, and wetlands should be protected from various management activities.

Response #H089

We agree it is policy to protect these areas by implementation of site-specific BMP's at the project level. For example these areas are identified on timber sale maps for protection from disturbances associated with yarding equipment and falling of trees. Also see Responses H001 and H003.

Topic #H090

The Plan must disclose all potential effects, in comparative, quantifiable terms, of the proposed actions on quality and quantity of fish habitat and water quality.

Response #H090

Several tables in Chapter 2 of the DEIS/FEIS display the estimated average annual TNF water yield and/or portion of yield meeting quality standards by decade for all alternatives. It is not possible to 'quantify' such impacts as sediment production since there are presently no credible sediment models for the Sierras as noted in Responses H038 and H040.

Topic #H091

The DEIS must disclose all effects of grazing on riparian vegetation and water quality.

Response #H091

The DEIS does not describe these effects except in a relative comparison between alternatives. Since effects cannot be quantified at this level of planning. In other words it is understood that the potential to adversely impact riparian resources is directly related to the amount of grazing. It is believed that the implementation of BMP's through the allotment plan will mitigate these impacts (see Response H#027).

Topic #H092

The planning documents fail to analyse and disclose the effects of intensive timber management in the riparian environment on the entire forest ecosystem.

Response #H092

Intensive timber management is not planned in the riparian environment as part of the Final Forest Plan. Any cutting of trees in this zone will be incidental and insignificant. Refer to Response H001 and Appendix F.

Topic #H093

The planning documents fail to tell which actions will be permitted in a given part of an MA, or under what site conditions such as meadow edges, steep slopes, etc. practices like clearcutting will be permitted.

Response #H093

Some of these concerns have been addressed by the identification and resolution of critical issues (CI) such as the riparian/SMZ CI whereby timber harvest will be severely restricted in these areas. Other concerns are addressed by revised or new S&G's such as S&G 30 (Meadow Edge Habitat). See responses H001, H003, and H089 as examples of constraints in sensitive areas.

Topic #H094

Monitoring plans F09-292 and F09-291 do not have reporting periods that are immediate enough to be effective or variability standards that are sensitive enough to protect the resources they measure.

Response #H094

The (annual) reporting period is sufficient for the type of monitoring envisioned. The variability standards are either tied to State and Federal water quality standards where water quality parameters are measured (F09-292), or are reasonable judgments in the case of acres of restored lands (F09-291, F09-292). The EPA response to these same monitoring plans was favorable.

Topic #H095

The plan fails to identify developments such as existing impoundments, transmission facilities, etc. per 36 CFR 219.23(b).

Response #H095

This information is included in various planning documents. For example Chapter II ('Facilities' and 'Water') of the AMS document identifies such facilities as large impoundments either in detail or by reference. Also, individual MA description write-ups include the identification of developments such as impoundments (e.g. MA 025 Milton-Jackson).

Topic #H096

The plan violates 36 CFR 219.27(e). Various practices and S&G's are inadequate in protecting riparian areas.

Response #H096

S&G's FC1w, FC2w, and FC3w and Practice EC7w have been improved and replaced by S&G's 46 and 47 and Plan Appendix F.

Topic #H097

The plan violates 36 CFR 219.27(f) by failing to adequately consider the conservation of soil and water resources.

Response #H097

Region 5 FSH 2509.22 provides specific direction for the prevention and mitigation of damage to the water resource. Separate chapters address the protection of riparian areas, the protection of SMZ's, the cumulative watershed effect (CWE) analysis methodology, and the implementation of BMP'S. Additional direction exists as exemplified by Plan Appendix F.

Topic #H098

There is no alternative placing wide protective buffers with no logging around streams, lakes, etc.

Response #H098

This is true in the DEIS; all alternatives used the riparian area MMR. In the FEIS the Citizen's Alternative will accomplish the option of wide buffers of exclusion. The FEIS preferred alternative includes Forest constraints much more restrictive than the MMR although less protective than the Citizen's Alternative; see response H001 and Plan Appendix F

Topic #H099

There is no alternative that places the highest priority on the protection of soil and watershed resources.

Response #H099

Alternative E of the DEIS, the amenities alternative, is believed to prioritize soil and water. The Citizen's Alternative (NMK) does the same in the FEIS.

Topic #H100

Inadequate funding is resulting in failure to comply with public demands for protection of riparian areas and water quality.

Response #H100

Forest S&G's (e.g. S&G's 46, 47, and 50) are intended to provide the necessary protection for these areas.

Topic #H101

The DEIS fails to discuss and disclose the added risk of fire damage to SMZ's when timber cutting occurs in and adjacent to the SMZ

Response #H101

This problem is acknowledged in the 'Riparian Areas' sections of the AMS document (Chapter 11) and the DEIS (Chapter 3, especially in regards to broadcast burning of slash on cable ground. It is expected that the deemphasis of timber harvest in SMZ's in the Final Plan will significantly lower the risk (see Response H001).

Topic #H102

DEIS pages 3.57 and 4.70 fail to adequately discuss and disclose the adverse environmental impacts of alternatives on riparian areas.

Response #H102

Chapter 4 of the DEIS discloses the relative 'potential' impacts to the riparian resource by linking this potential to the intensity of management activity as-

water

sociated with each alternative. It is believed that qualitative comparisons of alternatives is appropriate since there isn't the means (e.g. sediment models) to do a quantitative comparison

Topic #H103

DEIS pages 3.80 and 4.103 fail to adequately discuss and disclose the adverse environmental impacts of alternatives on water quality.

Response #H103

Chapter 4 of the DEIS discloses the estimated impacts to water quality (and water yield) from the various intensities of management associated with alternatives. It is believed that these comparisons are appropriate based on the level of planning and on the available data

Topic #H104

The full effects of current management activities on water quality and the riparian environment must be clearly discussed in the affected environment section of the FEIS.

Response #H104

Language has been added to the 'Riparian Areas' chapters of the AMS document and FEIS noting recent identified problems.

Topic #H105

The sections in the DEIS on cumulative watershed effects (CWE) fail to disclose the effects of equivalent road acres (ERA's) on soil productivity loss and compaction, and the variation of ERA acreage by size of watershed.

Response #H105

There is no correlation between ERA's and soil productivity; the CWE methodology is a procedure to analyse the effects of management on off-site water quality and channel integrity, not to analyse on-site soil productivity. Compaction is one of the major factors used to develop ERA coefficients and thus is built into the CWE methodology. ERA acreage is expressed as a percentage of watershed area when comparing management strategies against thresholds of concern (TOC); the TOC (expressed in ERA percent) is a function of watershed sensitivity and not size of watershed

Topic #H106

The FEIS must disclose the effects of alternatives on the water quality of the North Fork American Wild and Scenic River.

Response #H106

We expect a higher relative water quality to meet standards here than for the entire Forest as reflected in such tables as noted in Response H090. This is explained by the wider (minimum of 1/4-mile) retention zone on either side of the river than for other comparable size rivers, and to the semi-primitive non-motorized (SPNM) status for a substantial area above the wild river boundary; there is no scheduled timber harvest from SPNM areas

TOPIC #H107

The DEIS fails to discuss the increased likelihood of hazardous materials spills associated with increased logging and industrialization in remote areas.

Response #H107

Although not discussed in detail, the Forest acknowledges the increased Potential for hazardous spills due to increased industrialization and logging in rural areas. Experience has shown industrialization and associated increased traffic and service needs, and not Forest activities, has been the primary cause of the increased potential for spills. As part of the Forest Service preparedness for spills, an 'Oil and Hazardous Substances Pollution Contingency Plan' was prepared and is incorporated by reference in Chapter 1 of the DEIS and Chapter I of the Draft Forest Plan. The preparation of the spill plan is partial fulfillment of BMP 7.4 (see S&G 50 - Water Quality Protection and Appendix E)

Topic #H108

The text on riparian areas (DEIS, pg 2 112) implies significant differences between alternatives, but this is put in perspective by the text on page 4 70.

Response #H108

What the text on page 4 70 states is that the impacts to wetlands (areas of riparian vegetation mostly void of timber), riparian ecosystems (similar to wetlands), and floodplains (usually void of timber), would not differ significantly by alternative, assuming the use of BMP'S; this is true for these three components of riparian areas. However, two other components of riparian areas, SMZ's (terrestrial lands adjacent to

streams and lakes that usually include commercial timber) and the aquatic ecosystem (streams and lakes), have greater 'potential' to be adversely affected under high commodity alternatives than under amenity alternatives; this is stated in the second paragraph on page 470 and as noted is directly correlated with the amount of clearcut acreage and road building.

Topic #H109

A map of Streamside Management Zones (SMZ) should be included in the Final Forest Plan.

Response #H109

We have identified most of the perennial streams on 1:24,000 scale topographic maps as part of the planning file; there are over 1500 miles of these streams on the Forest. There are many times more miles of intermittent and ephemeral streams on the Forest and mapping them would be a prohibitive undertaking; furthermore since these streams are identified for protection at the project level, it is unnecessary to identify them on base maps which would require a larger scale,

Topic #H110

The Best Management Practices (BMP) documents tiered to the DLRMP are not in compliance with NEPA.

Response #H110

The BMP documents were prepared with review and approval by the State Water Resources Control Board (SWRCB) which was delegated the lead water quality planning agency in the state of California by EPA. Acceptance of the document by SWRCB is formalized in a 1981 MAA between that agency and the USFS. EPA approved the BMP documents and MAA

Topic #H111

Protection of reservoirs from sedimentation should be considered as a benefit in the economic analysis of alternatives.

Response #H111

As noted in Responses H038, H039, and H040, credible sediment models don't currently exist for the Northern Sierras. Therefore it is not possible to derive reliable sediment yields which can be modeled for economic benefits.

Topic #H112

The DEIS (1) fails to identify rivers and canyons as a major public ICO, (2) ignores hydrology and underestimates the impacts from timber harvest, (3) fails to consider downstream hydrology and overestimates water production benefits, (4) fails to consider alternatives which would protect the rivers and canyons, and (5) is incorrect in contending that a 100-foot riparian buffer strip is sufficient to protect rivers from soil erosion resulting from timber harvest.

Response #H112

Rivers and canyons are recognized as a major public ICO as addressed in Response H001. Also, there are a number of river canyons which will receive low intensity timber harvest due to recreational and visual constraints; examples include the North, Middle, and South Yuba Rivers, the North Fork of the American River, the Truckee River, and the upper reaches of the Rubicon River.

Refer to Responses H011, H021, and H051 as examples of how hydrologic impacts (including downstream hydrology) from timber harvest are addressed by the Forest Service. The use of BMP's and cumulative watershed effects analyses are intended to mitigate potential impacts to water quality and stream channels

We used the Regional water production value since there is not sufficient information to develop local values. It should be noted that the forest only places a value on the amount of added runoff that could be captured for beneficial use.

The amenities alternative (Alternative E) offers a large amount of protection to rivers and canyons since regeneration cutting would be maintained at historical levels. The Citizen's Alternative (NMK) does the same in the FEIS.

Greater than 100-foot SMZ's will be used where necessary to protect riparian values. Refer to Responses H001 and H002.

Topic #H113

There should be a discussion of the effects of the mediterranean climate on several factors including (1) the evolution of TNF ecosystems, (2) new soil formation, (3) regeneration of forest trees, (4) impacts on forest ecosystems due to management activities, (5) reforestation success, (6) soil erosion

Water

associated with heavy winter rains, and (7) impacts to surface and ground water quality, quantity and timing of flow.

Response #H113

The affect of the mediterranean climate on these factors is inherently taken into account in the formulation of S&G's and in the determination of acceptable management activities. For instance, S&G 55 (Maintain Soil Productivity) includes minimum effective ground cover requirements with the intent of minimizing soil loss to erosion; these ground cover requirements were derived partially with the reasoning that soil losses should not exceed the rate of new soil formation.

Topic #H114

It needs to be stated whether water yield increase values are included in the 919,000 acre-feet of usable runoff or are in addition to this. Water yield increase and values are directly related to timber management activities.

Response #H114

All water yield increase values are in addition to the approximately 2,000,000 acre-feet of net runoff (and 919,000 acre-feet of usable runoff) from NFS land. FORPLAN incorporates water values (\$59 per acre-foot) for all usable water, including a portion of water yield increase (which is from predominantly timber related activities). The portion of water yield increase that is valued is that which is expected to occur in drought years; the reasoning is that in average and wet years any increase in yield is not captured for use. For planning purposes drought periods were estimated to occur 20 percent of the time so that 20 percent of the water yield increase is valued.

Topic #H115

Manage the Carman watershed for watershed protection and improvement.

Response #H115

The Forest has identified this need and delineated this watershed as a separate distinct management area (MA 001). The primary resource management emphasis here is watershed protection and restoration. An ongoing restoration program has been coupled with a reduction in resource commodity outputs (i.e. long rotation timber management is emphasized and SMZ's are unsuited for regulated timber production).

Topic #H116

The total value of runoff from the TNF, at \$59 per acre foot, averages \$200,000,000 per year. The actual value of water is much higher than \$59 per acre foot since it ignores the value of hydroelectric production. The Forest should investigate the effect of this undervaluation in the FORPLAN results.

Response #H116

The \$59 per acre foot value is the Regional water value and incorporates consumptive uses (primarily irrigation). It is true that hydroelectric values were not included. However, it is our belief that the \$200,000,000 total value that is presented may be high in light of the fact that unrealized hydroelectric values are at least somewhat offset by the realization that not all runoff is 'captured for consumptive use'. There is storage capacity for only about 46% of the average runoff so that it could be argued that the presented total value for consumptive use (at \$59 per acre foot) should be \$92,000,000 per year instead of \$200,000,000.

The important fact in comparing alternatives is that water yields and thus total water values do not differ significantly by alternative. Background levels (where no management activity is assumed) are constant and account for the bulk of water yield and attendant values. In other words, the preponderance of water yield (and water values) will occur regardless of land management emphasis. This explains why in the economic analysis that water yield does not represent a significant factor in determining the preferred alternative.

Another way to visualize this is that any additional economic values derived from water yield increase do not contribute significantly to overall economic values under any alternative; in fact any increases in value might be offset due to the unknown attendant costs associated with flood losses.

Topic #H117

The Plan should note that under the Escondero Decision the USFS can require minimum streamflows to maintain fish and wildlife at pre-project levels, at new and licensed sites.

Response #H117

This is considered in the AMS document, the EIS, and in S&G's 48 and 49.

Topic #H118

Pertaining to the Forest road system, the emphasis should be to manage runoff.

Response #H118

There are about 20 BMP's that deal specifically with road construction and reconstruction. See Response H021 and Plan Appendix E

Topic #H119

There is a question of how uncut timber sale acres under contract were handled in FORPLAN. There are also questions as to why SMZ's and sensitive soils were not given level identifiers, and why the wetlands acre estimates were not integrated into the FORPLAN levels or prescriptions.

Response #H119

The uncut sale acres under contract are assumed to be part of the first decade harvest.

Both SMZ and sensitive soil acres are identified in the data base and modeled in FORPLAN as constraints. Timber yields were significantly reduced in these areas, particularly in SMZ's.

Wetland acres are included in the data base and treated as unsuitable for timber yield. Several S&G's and BMP's, and Plan Appendix F, either directly or indirectly address the protection of wetlands, riparian areas, meadows, and meadow edges

TOPIC #120

No costs were attributed to the benefits of water yield. The effects of management on water quality are given no costs in the model. Direct costs including mitigation measures necessitated by timber harvest activities must be included in the cost analysis.

Response #H120

There are no costs associated with background water yield; this is water that naturally runs off regardless of management intensity. Water yield increase over background is predominantly an incidental consequence of timber related activities, particularly regeneration cutting. The costs of this additional water yield is considered to be already covered under timber costs, which includes water quality mitigation costs (BMP's). BMP costs are built into the direct costs of doing business for specific management activities (timber harvest, roadbuilding, fuels treatment, etc.).

WILDLIFE

Topic #W001

Grazing has not contributed to deer herd declines.

Response #W001

The effects of livestock grazing on deer is a very controversial subject. Analysis of forage conditions on the TNF indicate that livestock are not adversely affecting deer forage availability. Studies on other relationships between domestic animals and deer have been inconclusive. Adverse impacts have been demonstrated in some areas while no effects were identified in others. Relationships between the animals have not been thoroughly investigated on the Tahoe National Forest or nearby. Accordingly, the effects of livestock grazing on deer population levels is not understood at this time.

Topic #W002

Non-essential roads and logging spurs should be closed to protect wildlife habitats.

Response #W002

We agree and have incorporated Practice L9 to permit road closures as a habitat management measure

Topic #W003

Effects of roads on fish and wildlife have been inadequately assessed

Response #W003

The potential effects of roads on wildlife are very complicated and poorly understood at this time. Variables that influence the effects include: road density, road construction and design standards, types and intensities of road use, habitat type and structure adjacent to the road, and specific animal species of interest. Since precise assessments of these variables are not practical on a Forestwide scale, impacts of area-specific road systems are typically deferred to project level analyses.

Topic #W004

Encouragement of new downhill skiing facilities would seriously impact important wildlife habitat.

Response #W004

Downhill ski facilities have the potential for adverse impacts to some wildlife species. However, some

species could also respond favorably to habitat modifications associated with chairlifts, ski runs, and other developments. We believe that summer recreational use of downhill ski facilities have the greatest potential for adverse impacts. Particular attention will be given to preventing or mitigating these impacts during the permit process for ski developments.

Topic #W005

Each alternative should provide a program for acquiring private lands that are critical fish and wildlife habitats.

Response #W005

The alternatives establish programs of management for public lands only. Based on the theme of the alternative, the forest Landownership Adjustment Plan will be updated and will reflect all land adjustment needs, including acquisition of important fish and wildlife habitats.

Topic #W006

Mining should be permitted where sensitive areas for fish and wildlife can be protected

Response #W006

We agree. Protection of sensitive areas associated with individual mining projects is normally provided through the permits and operating plans for mining operations.

Topic #W007

The 100 foot protection zone and Forest Standards and Guidelines are insufficient to protect riparian resources and insufficient protection is afforded to ephemeral and intermittent streams.

Response #W007

We have reevaluated the management strategy for riparian areas and stream-side zones. The width of the area designated for riparian area protection is established in the NFMA regulations (36 CFR 21927e) and will not be changed. However, greater protection for riparian areas and stream-side zones is provided in the Forest Plan as described in Appendix F.

Topic #W008

The Plan should include stream-side protection zones and buffer strips along all bodies of water and variable width riparian protection zones should be developed.

Response #W008

As provided by 36 CFR 219.27e, areas extending approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water will be established for protection of riparian values. Variable width streamside protection zones will be established along perennial streams as described in Appendix F.

Topic #W009

Very limited or no timber management should be permitted in stream-side zones.

Response #W009

Timber management will not be practiced within riparian zone (100 feet from the edge of perennial streams) unless it is prescribed to accommodate road rights-of-way, occasional cableways, the needs of riparian-dependent resources (fish, wildlife, soils, and water), or is needed for public safety. Timber management will be permitted in the variable width stream-side zones as prescribed in Appendix F.

Topic #W010

Grazing should be eliminated or reduced in riparian areas.

Response #W010

Protection of riparian values will be afforded by correcting site-specific problems as they are identified. See Appendix F and S&G 33 for additional Forest resolution of grazing impacts in riparian areas.

Topic #W011

Recreation developments should not be permitted in riparian areas.

Response #W011

We believe that riparian areas provide an important source of public recreation. Accordingly, some recreational developments such as footbridges and fishing trails will be permitted in riparian areas. Other recreation facilities will be sited in a manner that accommodates the need for public use while em-

phasizing protection of soils, water, and fish and wildlife habitats in riparian zones. In most cases, this will result in siting facilities outside the riparian zone.

Topic #W012

Roads, log landings, heavy equipment, and OHV travel should not be permitted in riparian areas.

Response #W012

We believe that all land-disturbing activities should be minimized in riparian areas. However, some site conditions (e.g. road and trail crossings) dictate the need for some disturbance. Appendix F has been developed to reduce disturbances in riparian areas to those required for reasonable management of the land.

Topic #W013

Dependent resources must dictate management actions in riparian areas as specified by NFMA.

Response #W013

We agree. Resources specialists have been given the responsibility of overseeing management in riparian areas as described in Appendix F.

Topic #W014

Riparian areas should be protected.

Response #W014

We agree. See responses to the preceding seven topics.

Topic #W015

Riparian areas are poorly defined in the DEIS and DLMP.

Response #W015

See page F-2 (Appendix F) for definitions of riparian areas.

Topic #W016

Planting new species in riparian zones may be detrimental.

Response #W016

The TNF will attempt to plant native species whenever possible. If native species cannot be utilized, non-competitive and sterile species are often planted in their place.

Topic #W017

A Forestwide inventory of riparian areas should be completed and maps should be prepared.

Response #W017

The Forest Planning Files detail existing data on the locations of riparian areas. These data will be updated during implementation of the Forest Plan.

Topic #W018

A map delineating the locations of all proposed harvest units and roads in riparian areas should be made available in the FEIS.

Response #W018

These data would be extremely difficult to display in the FEIS. However, there should be no harvest units planned in riparian areas during Plan implementation unless they are developed as described in Appendix F. Data displaying the locations of existing and proposed roads are available for site-specific areas in transportation files on appropriate Ranger Districts.

Topic #W019

Appropriate snag standards should be developed for riparian areas to protect dependent species.

Response #W019

The Forest agrees. Standards and Guideline #26 specifies that all snags will be left in riparian areas where consistent with fishery and public safety objectives.

Topic #W021

Timber management should be emphasized over fish and wildlife habitat management.

Response #W021

The Forest Plan provides an acceptable balance between production of commercial timber and maintenance of wildlife and fish habitat.

Topic #W022

Timber harvesting is compatible with fish and wildlife habitat management.

Response #W022

Each timber harvest prescription can be compatible with habitat objectives for some species and incom-

patible with the habitat needs of others. The Forest Plan is intended to provide a framework from which compatible harvest prescriptions and habitat objectives can be merged.

Topic #W023

Opposes a heavy program of clearcutting because of the effect of wildlife.

Response #W023

Clearcutting will have both positive and negative effects on wildlife. A heavy program of clearcutting would produce an increase in species associated with early seral stages of forest succession. Conversely, species associated with mature and old-growth forests would decline. The effects of different silvicultural systems and intensities are described in the DIVERSITY and WILDLIFE sections of Chapter 4 in the EIS.

Topic #W024

The Forest should analyze the cumulative effects of clearcutting on wildlife.

Response #W024

The cumulative effects are evaluated in the DIVERSITY and WILDLIFE Sections of Chapter 4 in the EIS.

Topic #W025

Areas with objectives for wildlife and timber management intended should be removed from the regulated timber base to insure that wildlife objectives can be achieved.

Response #W025

We believe that timber management and wildlife habitat management can be merged in many areas of the Forest (see response to #W022). Where routine timber management practices may not blend with wildlife habitat objectives (e.g. spotted owl areas, riparian habitats), the associated acres have been removed from the regulated timber base.

TOPIC #W026

The Draft Plan does not address logging's potential adverse effect on wildlife genetics.

Response #W026

The Forest Plan includes Appendix D that is intended to maintain populations of all native vertebrates well above viability thresholds. Accordingly, population

genetics is not expected to be a problem for local species during the planning period.

Topic #W027

Timber should be managed with a variety of silvicultural methods to benefit wildlife.

Response #W027

See responses to Topics #W022 - #W025.

Topic #W028

When even-aged timber management is practiced, stands should be small to benefit wildlife.

Response #W032

We believe that the sizes and shapes of openings created by clearcutting and shelterwood cutting should blend considerations for soil stability, wildlife habitat, timber yield, reforestation, economic efficiency, and other appropriate site-specific variables. For this reason, the sizes and shapes will vary by site.

Topic #W029

Consequences of various alternatives and the plan on fish, wildlife and diversity have been inadequately addressed and recommends a reevaluation.

Response #W029

The effects of management alternatives have been reevaluated. The results of the evaluation are displayed in Chapter 4 (DIVERSITY, FISH, and WILDLIFE Sections) of the Final Environmental Impact Statement.

Topic #W031

In the absence of a well-developed biological database, the Forest should assume a worst case assessment as provided by NFMA.

Response #W031

We acknowledge the absence of a well-developed biological database for fish and wildlife. However, we also believe that neither NFMA nor NEPA requires assumption of a worst case condition when evaluating the alternatives. The FEIS is believed to provide a reasonable projection of the relative effects of each alternative on fish and wildlife resources.

Topic #W032

Alternative D is not a reasonable approach for emphasizing fish and wildlife because of species selected as targets for management, the management strategy for roads and timber management, and lack of focus on non-game animals

Response #W032

We chose to emphasize wildlife in two alternatives in the Draft Environmental Impact Statement. Game animals were featured in Alternative D and non-game species were the focus of Alternative E. The road and timber management programs developed for Alternative D are believed to be compatible with a wildlife emphasis on game species. For example, we believe that a large program of even-age timber management would be compatible with deer habitat objectives. The increased roads built to manage the timber resource would also provide hunter access and those in conflict with habitat objectives could be the focus of regulated travel

Topic #W033

Emphasizing nongame animals in one alternative (E) and non-game in another (D) creates conflicts among wildlife advocates and is a disservice to the Forest Service.

Response #W033

We believe that these alternatives are instructive because they consider the effects of focusing the Forest wildlife program on game versus non-game animals.

Topic #W034

Questions if the lack of habitat improvements and the inability to reach deer herd plan goal should occur in the wildlife alternative (E).

Response #W034

Deer and other game animals are not a focus for management in Alternative E as these species were featured in Alternative D. If Alternative E were implemented, the prevailing plans for local deer herds would be revised to reflect the appropriate level of emphasis on deer habitat management. Deer herd population goals would likely be revised downward as well.

Topic #W035

Opposes sections of DEIS that project outputs/effects in the 5th decade without a discussion of the effects in the 1st decade since the plan is really intended for 10-15 years.

Response #W035

Fish and wildlife outputs for decades 1-5 are displayed in several tables in Chapter 2 of the EIS.

Topic #W036

Questions the validity of using untested fish and wildlife models for projecting impacts of various alternatives over time.

Response #W036

We agree that untested models should be used with caution. We also agree that using the models to project trends in animal numbers in the DEIS may have been unnecessary and this approach was not used for the FEIS.

However, species/habitat relationships modeling is an integral component of the adaptive management strategy developed for the fish and wildlife program on the Forest (see Appendix D in the Forest Plan). The Forest views the models as the cornerstones for developing site-specific habitat objectives and working hypotheses that will be tested and revised as Plan implementation proceeds.

Topic #W038

Will the Management Indicator Species (MIS) and the diversity standards for the Pacific Southwest Region of the Forest Service will adequately satisfy NFMA direction for maintaining viable populations.

Response #W038

We have reexamined the focus of the fish and wildlife habitat management program. A number of individual species and species groups have been added to the program. The California Department of Fish and Game and U.S. Fish and Wildlife Service concur with the species list. The species list represents animals which the agencies share the greatest concern for population viability at this time.

In addition to increasing the species list in the fish and wildlife program, the Forest will complete the following actions for each species and group over the next planning period. 1) work with the California Department of Fish and Game and U.S. Fish and

Wildlife Service to establish target population levels or number of sites where the various species and groups will receive management emphasis; 2) identify the locations where habitat management will occur; 3) develop habitat relationships models for each species and group that will include habitat management prescriptions and be the focus of monitoring work. Additional information about in the fish and wildlife habitat management program are provided in Appendix D.

Topic #W039

Recommends adding other specific Management Indicator Species (MIS) to the list in the draft Forest Plan.

Response #W039

A number of individual species and species groups have been added to the program. The California Department of Fish and Game and U.S. Fish and Wildlife Service concur with the species list.

TOPIC #W040

Questions criteria and methods used to set viable population levels for the plan.

Response #W040

The approach used for the Draft Plan is undesirable. More satisfactory techniques are being explored nationally and these techniques will be applied when available. In many cases, population targets for viability should be assigned for geographic areas larger than individual National Forests. Until more satisfactory approaches are available, the Forest will avoid analysis of species viability at the local level.

Topic #W041

Opposes managing for wildlife above viable population levels.

Response #W041

Most species should be maintained at levels considerably above those needed for population viability.

Topic #W042

Believes that managing wildlife at viable population levels is too low.

Response #W042

We believe that most species should be maintained at levels considerably above those needed for population viability.

Topic #W043

A comprehensive fish and wildlife monitoring program that includes riparian habitat, fish and spotted owls are a critical component of the plan. The monitoring program should be strengthened and receive a top priority for funding and emphasis.

Response #W043

Fish, spotted owls, and species associated with riparian habitats are a focus for management in the Forest Plan (See Appendix D) and will be monitored accordingly. At this time, we are concerned about the availability of funds to develop a comprehensive monitoring program

Topic #W044

Questions if funds will be available to complete monitoring plans.

Response #W044

At this time we are concerned about the availability of funds to develop a comprehensive monitoring program for fish and wildlife. Additional funding will be required to complete the monitoring program presented in the Forest Plan. If the funds are unavailable, the monitoring program will be completed to the level possible with available resources.

Topic #W045

To maintain satisfactory ecological and genetic diversity, at least 10% of each management areas should be maintained in an unmanaged natural state.

Response #W045

We are uncertain about the justification for the 10% value. Until satisfactory data to support this level are presented, we will continue to comply with the standards for the Pacific Southwest Region which specify a 5% value.

Topic #W046

The California Department of Fish and Game natural diversity database should be used to select species and locations for fish and wildlife management in the final plan.

Response #W046

We agree. A copy of the database has been received from the California Department of Fish and Game,

and it will be used to identify locations for fish and wildlife management.

TOPIC #W047

Fragmentation and monoculture timber management proposed by the Forest Plan would result in unacceptable adverse impacts to plant and animal diversity.

Response #W047

Forest diversity has been reevaluated for the final Environmental Impact Statement for the Forest Plan. The evaluation is presented in Chapter 4 (DIVERSITY and WILDLIFE Sections) of the EIS.

Topic #W048

The plan should make managing for a broad range of plant and animal species a primary goal.

Response #W048

The fish, wildlife, and sensitive plant programs in the Forest Plan are developed to maintain all existing plant and animal species. (See Appendix D.)

TOPIC #W049

The diversity MMR is unclear. Will there be 5% of the habitat in each of the seral stages, or 5% in one stage only? How will the standards be implemented and monitored? Have the standards been field tested?

Response #W049

Each seral stage will comprise at least 5% of the landbase in every habitat type. The standards will be applied at the Forest level and will be implemented by producing the outputs established in the Forest Plan. Monitoring will occur by comparing field records with FORPLAN projections at five-year intervals.

Topic #W050

Hardwoods should be preserved

Response #W050

We agree that some hardwoods should be preserved for wildlife habitat, diversity, and visual quality. The Forest Plan has been revised to add protection for more hardwoods than the draft Plan. However, we believe that more hardwoods exist today than were present under natural conditions. The Forest Plan permits the reduction of hardwoods in some areas to provide increased opportunities for

Wildlife

reforestation of commercial softwood timber. In other areas, hardwood management is focused on protecting wildlife habitat values and other resource programs are of secondary importance.

Topic #W051

More hardwood should be preserved than proposed in the draft plan.

Response #W051

We agree S&G 28 has been revised to provide more hardwoods than prescribed in the draft Plan.

Topic #W052

The Forest Service doesn't have the right to favor one species at the expense of another. I feel the western red-backed vole deserves some attention with proper management of remaining old growth timber. Respondent is also concerned about reintroduction of the fishers, wolverine, and Sierra Nevada red fox.

Response #W052

Reintroductions of wildlife species are under the jurisdiction of the California Department of Fish and Game. We have no plans for reintroductions. We have no evidence which suggests that red-backed voles exist on this Forest. The wolverine, fisher, and Sierra Nevada Red Fox are included in the Forest Fish and Wildlife program (see Appendix D).

Topic #W053

Old growth forests should be maintained.

Response #W053

Responses to comments about old-growth forest are difficult since a consensus definition is lacking. However, we believe that some large tracts (500+ acres) of mature and over-mature forests may be needed for management of important wildlife species. Accordingly, the importance of large tracts of 'old-growth' as wildlife habitat will be evaluated in project-level environmental impact statements before timber harvest is permitted there.

Topic #W054

Retain all roadless areas for old-growth.

Response #W054

We believe that retaining all roadless areas for old growth is inappropriate for two reasons. 7) some roadless areas are not suitable sites for production

of old-growth forests, and 2) some sites are needed for harvest of commercial timber. However, proposed timber harvest in roadless areas that contain large tracts of mature and old-growth forest will not be completed without preparation of project-level environmental analysis conducted in compliance with NEPA.

Topic #W055

The FEIS should include a map of existing old-growth and mature forest.

Response #W055

With the absence of a consensus definition for "old growth" we do not believe such maps would be instructive. However, these data for candidate old-growth stands are available in the Forest Planning file. Data on acreages of mature and old-growth forest are presented in Chapter 4 (DIVERSITY and WILDLIFE Sections) of the FEIS.

Topic #W056

Snags. minimum forestwide standards should be developed.

Response #W056

We agree and have included Standards and Guideline #26 in the Forest Plan. This Standard and Guideline is presented as Forestwide direction for maintaining minimum snag densities on the Forest.

Topic #W057

A forestwide snag inventory should be completed.

Response #W057

We disagree. Current snag conditions are evaluated during routine fieldwork for timber sale planning projects and recommendations for maintaining forestwide snag standards are provided at that time. Since snags are believed to be adequately addressed at the timber compartment level, it is unlikely we will complete a Forestwide survey.

TOPIC #W058

A moratorium on snag removal should be implemented until more research on dependent species is completed.

Response #W058

The Pacific Southwest Region of the Forest Service has established minimum snag standards that were developed with the best available research data. As

new data are available, the standards will be modified as appropriate to meet the needs of dependent species. The Forest standards for snags (Standards and Guideline #26) satisfies the Guidelines for the Pacific Southwest Region and the number of permits issued to fall standing snags is very small. Accordingly, we will not implement a moratorium at this time.

Topic #W059

Critical habitats for all threatened and endangered, sensitive and other indicator species should be identified and accompanying species-specific management prescriptions should be provided in the plan.

Response #W059

Time constraints will not permit completion of this work for inclusion in the Forest Plan. However, we intend to complete this work during Plan implementation as described in Appendix D.

Topic #W060

The Plan should incorporate portions of prevailing recovery plans for peregrine falcons and bald eagles.

Response #W060

The recovery plans are the cornerstone for identifying the target number of individuals for the Forest. Specific details regarding sites for management and habitat prescriptions will be derived from available information in the recovery plans. Additional details will be developed as needed in cooperation with the California Department of Fish and Game and the U. S. Fish and Wildlife Service.

TOPIC #W061

Special protection should be given to bald eagles, willow flycatchers, Lahontan cutthroat trout, and great gray owls.

Response #W061

We agree. Each species is included in the Forest fish and wildlife habitat management program (see Appendix D).

Topic #W062

The "Section 7" consultation process in the Endangered Species Act should be followed when proposed management projects involve threatened and endangered species.

Response #W062

We agree and will follow Section 7 provisions.

Topic #W063

The habitat needs of rare plants and animals should have priority over timber production.

Response #W063

Rare plants are included on the sensitive plant list for the Forest and rare animals are included on State and/or Federal threatened and endangered, sensitive, or special concern lists. These designations afford special consideration when timber management projects conflict with habitat needs of these species.

Topic #W084

The Plan's intent to increase deer herd size above levels specified in local deer herd plans is inappropriate.

Response #W084

We agree. The local deer herd plans are incorporated by reference into the Forest Plan, and their goals and objectives thereby become a part of the Plan.

Topic #W085

Alternative I would have an adverse effect on attaining deer herd goals.

Response #W085

We agree with this statement.

Topic #W086

Reforestation practices could be in conflict with forage needs of deer populations prescribed in local herd plans, more details relating to herbaceous and shrub management in regenerated stands should be provided in the FEIS and the Plan to ensure adequate forage is maintained.

Response #W086

S&G 27 has been added to the Forest Plan to provide adequate forage for deer during site preparation, release and thinning in key deer areas.

Topic #W087

The Forest Service should use California Department of Fish and Game's data to develop maps of critical deer ranges and migration corridors.

Wildlife

Response #W087

Forest personnel routinely work with the Department of Fish and Game to revise current maps of key deer areas. The wildlife element map in the planning file includes the best information available at this time. The Department provided much of the information on the map.

Topic #W088

The Forest Plan should make a commitment to work with DFG to delineate all key deer areas on the Forest

Response #W088

We agree. Delineating key deer areas is a part of all deer herd plans for herds on the Forest. The Department of Fish and Game and the Forest cooperatively developed the herd plans and are cooperating to update current data.

Topic #W089

The Forest Plan should state a commitment to achieve the population goals identified in local deer herd plans.

Response #W089

We incorporated local deer herd plans by reference into the draft Plan on Page 12. This action commits the Forest to upholding the provisions in the herd plans. The Forest Plan also incorporates local deer herd plans by reference.

Topic #W090

Adequate areas for pileated woodpeckers should be provided by the Plan.

Response #W090

The pileated woodpecker is included as a species for special management emphasis in the fish and wildlife habitat management program. The number of areas where pileated woodpeckers will be featured will be determined during plan implementation in cooperation with the California Department of Fish and Game. See Appendix D of the Forest Plan for more details regarding implementation methods and the timetable for completion.

Topic #W091

The Forest should be managed for at least 500 territories for pileated woodpecker.

Response #W091

The number of areas where pileated woodpeckers will be featured will be determined during Plan implementation in cooperation with the California Department of Fish and Game (see Appendix D). However, since present Forestwide populations of pileated woodpeckers are believed to be considerably less than 500 pairs, it is unlikely we will decide to manage for this number of individuals.

Topic #W092

Pileated woodpeckers are not good Management Indicator Species for MA 079 as the area provides little suitable habitat there.

Response #W092

We will reevaluate MA 079 as potential habitat for pileated woodpeckers when the habitat management program is developed for this species. The species model for pileated woodpecker and land classification data in the planning file indicate there may be suitable conditions for the species in this management area.

Topic #W093

Respondent opposes hunting.

Response #W093

The Forest Service recognizes hunting as permitted by State and Federal regulations as a legitimate use of National Forest lands

Topic #W094

Opposes all forms of predator control

Response #W094

We recognize the need for some forms of predator control. On the Tahoe National Forest, these activities are limited to personnel from appropriate State and Federal agencies and are completed within the framework of plans jointly developed by the agencies. The plans prescribe that predator control will only be permitted where documented livestock damage is occurring.

Topic #W095

Favors predator control

Response #W095

See response to #W094.

Topic #W096

Favors reintroduction of extirpated fish and wildlife species.

Response #W096

There are no plans to reintroduce extirpated species on the Forest at this time. However, if the California Department of Fish and Game or U.S. Fish and Wildlife Service proposes such a reintroduction, the Forest will work with the agencies to evaluate potential projects.

Topic #W097

Provide protection for blue heron rookery near Bullards Bar Reservoir.

Response #W097

We agree and have included the Blue Heron in the Wildlife Management Program in the Forest Plan (see Appendix D).

Topic #W098

The Plan should provide 125 acres of suitable habitat around goshawk nests as prescribed by the 1986 DFG Cooperative Goshawk Study.

Response #W098

The recommendation in the 1986 Department of Fish and Game report is presented as an opinion of the authors. Present goshawk management direction in Pacific Southwest Region of the Forest Service is based on data in Reynolds (Management of Western Coniferous Forest Habitat for Nesting Accipiters, Forest Service Gen. Tech. Report RM-102, 1983).

This report recommends providing uncut areas of 20-25 acres around nest sites. Reynolds recommendations are based on measurements of nesting goshawk territories in Oregon and South Dakota. Guidelines in the Forest Plan are based on this research. However, territories measuring 120 acres will be provided in some locations. (See S&G 23)

Topic #W099

The assumption that wildlife will move to nearby undisturbed forest areas is extremely short-sighted. All species have very specific forage and habitat needs as well as definite ranges and if forced to move, most would not survive.

Response #W099

We agree and have not made the referenced assumption.

Topic #W100

Wildlife objectives prescribed for the Kyburz and Coolbrith areas will not be possible because of the effects of other prescribed management objectives there.

Response #W100

The draft Forest Plan did not identify all the wildlife habitat objectives for the Kyburz and Coolbrith areas although waterfowl will receive emphasis at Kyburz and deer in the Coolbrith area. We believe that the wildlife objectives can be achieved at these sites.

Topic #W101

Opposes proposed recreational developments in the Kennedy Meadows area because it is deer fawning area.

Response #W101

We are uncertain about the reference to Kennedy Meadows area as there is no meadow by that name within the Forest boundary.

Topic #W102

Planned recreational development at Boca and Stampede reservoirs may conflict with bald eagle habitat needs.

Response #W102

Recreational use has not precluded successful nesting by bald eagles at Boca and Stampede Reservoirs in the past. Appropriate regulation of recreation near nesting sites appears to have been critical for successful eagle nesting. Similar regulation of recreation use will be employed if eagle nesting attempts are discovered in the future.

Topic #W103

Old-growth forests in the West and East Yuba areas should be preserved.

Response #W103

Spotted owl habitat areas E-2 and E-3 are areas within the East and West Yuba areas that will be managed for old-growth forests. However, the remainder of the East/West Yuba area will be managed for multiple resource objectives which will include timber management.

Topic #W104

The Perazzo Meadow/Independence Lake area should be managed to emphasize habitat values for deer fawning, willow flycatchers, and Lahontan Cutthroat trout

Response #W104

We agree and these species will be managed at Perazzo Meadow/Independence Lake per the wildlife program in the Forest Plan.

TOPIC #W105

Supports the special wildlife protection afforded to Carmen Valley.

Response #W105

Thank you.

Topic #W106

The DEIS and draft Forest Plan do not comply with NEPA and NFMA for a variety of reasons dealing with wildlife that are interpretive in nature from the respondent.

Response #W106

The FEIS and Forest Plan are in compliance with both documents. The volume of questions that were interpretive of National laws and regulations was large and we did not answer each interpretation individually. Where compliance with NEPA and NFMA are questioned, we have followed Regional and National Direction where it applies. When Regional and National Direction is lacking, we have consulted with Regional Office Staff and other Forests

Topic #W107

A variety of comments addressed wildlife related decisions that are made with project-level documents

Response #W107

The Forest Plan and accompanying environmental documents are programmatic in scope. Project-level decisions will be made with additional environmental analyses conducted in compliance with NEPA that are subject to public review and appeal

Topic #W108

The DEIS and Forest Plan should be revised to more adequately satisfy requirements in NEPA and NFMA regarding wildlife concerns.

Response #W108

The documents have been revised to more fully disclose the environment consequences of proposed and alternative management strategies.

Topic #W109

Suggests a complete inventory of all fish, wildlife, and plant species **must** be finished before the Forest Plan is implemented and monitoring proceeds.

Response #W109

We disagree. Completion of a comprehensive inventory of all species with acceptable statistical design is prohibitively expensive with current funds and would require many years to complete.

Topic #W110

The (draft) Plan and DEIS fail to consider a realistic value for wildlife and fish. Therefore, recreational use of fish and wildlife cannot compete with activities such as timber production.

Response #W110

We used a standardized method for valuing fish and wildlife called the Wildlife and Fish User Day (WFUD). While it is impossible to assign precise values for WFUDs at this time, the resource values for timber production do not compete with those for WFUDs in FORPLAN. Accordingly, the comparative FORPLAN values do not influence decisions about levels of timber harvest and fish and wildlife recreation.

Topic #W111

We do not understand some of the assignments to MMR, MIR and TPC categories.

Response #W111

The assignments are described on Page 4-1 of the Regional Guide. MMR's are taken from 36 CFR 27. They generally represent requirements that are needed for compliance with NFMA and cannot be changed by the Forest Service. MIR's are requirements needed to ensure that alternatives are implementable and minimally acceptable. The MIR's are within USFS control. The TPC's are requirements

needed to ensure that timber harvest programs meet sustained yield, culmination of mean annual increment and dispersion standards.

Topic #W112

Both the Forest Standards and Guidelines and the Practices should be amended to adequately address wildlife resource issues and assure sustained or improved wildlife values Forestwide.

Response #W112

The Forest has amended most of the Standards & Guidelines and Practices in response to public comments on the Draft Plan. In addition, Appendix D has been added to further clarify the fish and wildlife habitat management program on the Forest. The California Department of Fish and Game and the U.S. Fish and Wildlife Service have provided valuable suggestions that have been incorporated into the Forest Plan.

Topic #W113

Many management area descriptions do not clearly identify significant wildlife values.

Response #W113

We agree. Poor knowledge of most management areas preclude thorough discussions of fish and wildlife values. However, the Forest has added Appendix D to establish procedures for inventorying habitats and establishing management programs for the important species over time.

Topic #W114

The Draft Plan goals and objectives are overly optimistic and unattainable considering the proposed programs for competing resources such as timber and range.

Response #W114

The Forest has added Appendix D to further clarify how fish and wildlife habitat goals and objectives will be pursued. We recognize that conflicts between resource objectives can arise as the Plan is implemented. These conflicts will be resolved with site-specific project environmental analyses conducted in accordance with NEPA.

Topic #W115

Habitat diversity should be evaluated and displayed by management area, sale area and harvest unit.

Response #W115

The Forest has been directed in the Regional Guide to evaluate diversity at the Forestwide level (see page 4-27). Moreover, the Forest database is not organized to permit evaluation of diversity by management area, sale area, and harvest unit.

Topic #W116

Since the Standards and Guidelines are designed to provide viable populations of fish and wildlife, implementing them without other constraints could allow some areas to be managed without regard for wildlife.

Response #W116

We agree. A goal of the Forest Plan is to maintain viable populations of existing fish and wildlife. Appendix D has been added to explain how that goal will be accomplished. When the fish and wildlife program has been organized, some areas will remain that are not needed for the management of one or more target species. These areas will be managed for other program objectives.

Topic #W117

All significant deer areas must be identified as an issue in management areas where they occur. Otherwise they will not be adequately represented against competing resources such as timber and range.

Response #W117

We have added Practice C1 to describe procedures for managing key deer habitat. The Practice has been assigned to management areas where key deer habitat has been identified.

Topic #W118

Questions if a successful management program for great-gray owls can be established.

Response #W118

The methods that will be employed to implement a management program for great-gray owls and all other MIS is explained in Appendix D of the Forest Plan.

Topic #W119

The Land Management Plan, page 11114 (paragraph 1), does not accurately describe the functions of the California Department of Fish and Game

Wildlife

Response #W119

The referenced description has been deleted from the text.



FISHERIES

Topic #1001

Logging creates adverse impacts on recreation and fishing.

Response #1001

Although logging and associated support activities can have an adverse impact on other resources, such as recreation and fishing, Standards and Guidelines #23, 24, 43, 44, 46, 47 and 50 will be used to minimize or eliminate these impacts. Monitoring will occur to test if our assumptions are correct

Topic #1002

The proposed campground along the Truckee River and Bear Creek would disrupt the fishing because of the pollution, etc.

Response #1002

Campground development along stream courses does not necessarily result in degradation to water quality as you have indicated. Any Forest activity, by law, cannot result in a violation of State water quality standards. Additional recreation activity can be expected as a result of this proposal; however, it is addressing a need that currently exists. The Standards and Guides for Stream Management Zones will direct actual location of the campground and facilities to areas not affecting riparian and aquatic resources, especially water quality. Increased fishing pressure may occur, and may have an effect on the fishery population. This section of the Truckee River is stocked with trout by the California Department of Fish and Game.

Topic #1003

The Forest Service should give more emphasis to management and protection of native fishes (game and non-game). It should encourage viability by habitat protection and perpetuation. Introduction of new species should be prohibited.

Response #1003

The "Rise to the Future" action initiative, which outlines an action plan to enhance fisheries resources and improve fishing for the Forest Service will serve as the foundation for the development of the fish-

eries program here on Forest Species introductions are regulated by the California Department of Fish and Game.

The Forest has adopted Standards and Guidelines for Stream-side Management Zones that are intended to protect the existing aquatic habitat and associated riparian areas. No logging will occur adjacent to streams unless there is a fisheries, water quality or wildlife benefit. This will protect the habitat for both game and non-game species. Species viability will be enhanced through habitat improvement projects.

Topic #1004

DEIS does not address the effects of road construction and timber harvest, and does not include sediment indexes. The plan assumes fish yield will not be affected by land disturbance. The yield of water meeting state and Federal standards is nearly the same for all alternatives despite significant differences in the amount of soil disturbed.

Response #1004

Fisheries habitat quality and quantity will not be affected by harvest activity through adoption of stringent standards and guidelines. Yield of water should slightly increase with increased clearcuts by creating a reduction in transpiration. Adherence to Best Management Practices (BMP's) will minimize impacts from road construction and timber harvest on water quality. Project analyses will specify which BMPs will be applied to maintain environmental quality. See Water Responses H001, H003, H031, H038, H040, Land Management Plan Standard and Guide #50, and Plan Appendices E and F.

Topic #1005

Clearcutting in the preferred alternative would cause the destruction of habitat, species, and change in the ecological make-up.

Response #1005

See Wildlife Response W023.

TOPIC #1006

The less noticeable long-term effects of clearcutting are the most damaging to stream habitat and fish.

Wildlife (Fisheries)

Response #1006

Site preparation activities following the green sale harvest of a stand of timber has the potential to create the problems you have identified in your letter. However, stringent harvesting standards and guidelines addressing soil erosion, ground cover components, Streamside Management Zones and riparian areas have been developed for inclusion in the plan as a result of the public's and our concern Degradation to fisheries habitat can occur without the implementation of such standards This can occur within the first year or two, however, as the ground revegetates, impacts or the potential for impacts to the aquatic system, are reduced. See S&Gs #23, 24, 43, 44, 46, 47 and 50.

Topic #1007

Increased sediment levels degrade fish habitat, destroy nest sites and reduce the amount of dissolved oxygen.

Response #1007

You're right Increased or high sediment levels in the stream during certain times of the year can create problems for resident fisheries Suspended sediment in high concentrations can abrade gill tissue and cause hemorrhaging, sediment can aggrade in habitat and reduce it's quality, and sediment can also cover fish redds and smother incubating eggs and fry. Sediment transport in stream systems is a natural occurrence during high flows. Fish and other aquatic life have developed life history strategies to adapt to this cycle The Forest has adopted stringent standards and guidelines such as Stream-side Management Zones and ground cover requirements, in addition to subscribing to Best Management Practices (BMP's) in order to further ensure that water quality standards are maintained and habitat quality is not diminished

Topic #1008

As a fisheries biologist, I have seen the total destruction of fisheries in areas that were clearcut The silt smothers the eggs in the gravel. The lack of cover causes radical changes in water temperature and available oxygen that eliminate any adult fish that may have survived the initial onslaught of mud and debris caused by rains on unstable clearcut areas

Response #1008

See Response #1006.

Topic #1009

The public was assured by various government agencies that steelhead, trout and salmon would thrive in the Klamath, Trinity, Eel, Matole, etc., etc., and it has been a well documented disaster

Response #1009

Adoption of stringent standards and guidelines related to timber harvest, as well as adherence to Best Management Practices, will assure environmental protection. The development of variable width Stream-side Management Zones, and no scheduled timber harvest along streams will further protect the fisheries and aquatic resources

Topic #1010

Some provision should be made for lost recreational uses (trails and degradation of fish habitat) due to increased timber harvesting.

Response #1010

Timber harvest activity creates only a short-term recreational loss – that being the time during the harvest and site prep activity Degradation to fisheries habitat will be minimized through the adoption of stringent standards and guidelines designed to protect the aquatic habitat. Improvements (trails, fences, habitat enhancement structures) are required to be protected under the timber sale contract.

Topic #1011

SMZ prescriptions fail to provide for large woody debris recruitment (fallen logs and tree roots) needed for trout cover.

Response #1011

The Forest has adopted stringent stream-side management zone (SMZ) guidelines to ensure protection of these sensitive areas Under Fisheries, within the Streamside Management Guides, we have added requirements for large woody debris

Topic #1012

The Forest Service must protect riparian corridors on permanent and intermittent streams to protect the wild trout fishery There is a need for unlogged Stream-side Management Zones Intermittent streams are important to trout as spawning areas

(evidenced by Erman & Leidy 1975. Transactions of American Fisheries Society, the study on the tributary to Sagehen Creek).

Response #1012

The Forest has adopted more stringent standards and guidelines relating to stream-side Management Zone prescriptions. Timber harvest will only occur within the SMZ on an opportunity basis, or for such things as road crossings, cable corridors where this is consistent with riparian-dependent resource goals. Wild trout resources will continue to be managed as a priority on the Forest within the stream systems. Intermittent streams on slopes greater than 30% (where erosion hazard is highest), are also covered in the SMZ guidelines, wherein they have reduced harvest goals.

Topic #1013

Near Rock Creek, twenty-one acres were clearcut. Erosion and debris changed Wolf Creek from an excellent trout stream to mediocre.

Response #1013

Several streams on Forest have been damaged by past timber harvest and site preparation activities. This has created concern both within the agency, the Central Valley Water Quality Control Board, and with the public. As a result, the Forest has adopted stringent stream-side management zone (SMZ) guidelines to ensure that these problems do not recur. The SMZ is of a variable width, its width is determined by stream class, channel stability and slope stability (the more sensitive the stream, the greater the width). There is no scheduled timber harvest planned for these areas. Timber harvest will only occur if it benefits riparian area dependent resources, such as wildlife, fisheries or water quality, or is necessary for road construction.

Topic #1014

Clearcutting that has been done near Downieville on steep slopes, right to the edge of the creek will cause erosion and sediment build-up resulting in the elimination of fish.

Response #1014

See Response #1013. In addition, the Forest is planning on watershed restoration program of approximately 100 acres a year to rehabilitate areas that have been damaged through natural or man-caused events.

Topic #1015

Logging in steep river canyons of the Middle Fork of the Yuba will cause negative effects on fisheries.

Response #1015

Logging within steep canyon areas can cause resource damage to the aquatic environment. This has created concern both within the agency and with the public. As a result, the Forest has adopted stringent stream-side management zone (SMZ) guidelines to ensure that these problems do not recur. The SMZ is of variable width, its width is determined by class, channel stability and slope stability (the more sensitive the stream, the greater the width). There is no scheduled timber harvest planned for these areas. Timber harvest will only occur if it benefits riparian area dependent resources, such as wildlife, fisheries or water quality, or is necessary for road crossings. The revised plan also calls for reclassifying much of the area in the Middle Fork Yuba from road-graded natural to semi-primitive motorized. Approximately 2700 acres will go from intensive timber management to incidental or minor timber management, limiting timber harvest to activities that will benefit other resources.

Topic #1016

The Rock Creek Nature Trail area had large Stream-side Management Zones, but riparian vegetation was burned, slash and rubble ended up in the creek, pools were lost, spawning gravel zone and immigration routes were blocked. Standards and guidelines C65A and CF1B were not met. What will happen in the out-back management areas?

Response #1016

We agree that riparian area goals were not met at Rock Creek, but we have established more stringent standards and guidelines, coupled with a more thorough analysis of the proposed project (from green sale harvest through site preparation and reforestation) to allow the agency to better identify and manage those areas that contain potential problems. This includes incidental or minimal harvest in perennial stream SMZ's, and only where it benefits the aquatic resources. Also see Water Response #H001.

Topic #1017

Clearcutting steep canyon slopes could result in massive erosion and siltation which will degrade water quality and quality of the fisheries. The im-

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pacts of logging this area on the wild trout fishery were not discussed. Plans for the area are inconsistent with the California Department of Fish and Game American River Wild Trout Management Plan. This needs to be discussed in the final EIS.

Response #1017

Based on public concern, the designation for the major portion of this areas has been changed to semi-primitive nonmotorized, including most of the area on the south side of the river. Most of this area lies in the steep canyons and is now inaccessible to timber harvest Areas designated as roaded natural and semi-primitive motorized have been changed from intensive management to incidental or minor timber management

Topic #1018

The planners who conducted computer modeling omitted important data that conflicted. They made highly questionable assumptions- increased timber hawest would not harm water quality or fish populations. Request response to review and revision of the plan.

Response #1018

It is our best professional judgment that the S&Gs, BMPs, and SMZ Guidelines will protect fish habitat. It would not have been appropriate to model fish habitat changes due to timber harvest, as the amount of change would have been mathematically insignificant for the FORPLAN model. See Response H024.

Topic #1019

The plan allocates much of the Forest to commodity production and clearcut hawest without adequate consideration of environmental impact and cumulative effects. Managing for Federal Wildlife resources necessitates restriction of intensive land-use practices

Response #1019

The Forest Plan is our best effort to balance the many resources and uses of the Nation Forest. We feel it has the highest net public benefit. Environmental impacts and cumulative effects are discussed in Chapter IV of the EIS, and mitigation measures were applied where feasible.

Topic #1020

Gal Trout opposes logging and road building in previously untouched, unroaded areas and wilder-

ness areas with trout resources. Industry benefits at the expense of ecosystem and society when timber revenues and local demands are low

Response #1020

See Response #1012 Project specific environmental analyses with public input will be conducted in compliance with NEPA on a//unroaded areas prior to timber harvest entry. Effects on wildlife and fishery resources will be analyzed.

Topic #1021

Protection of old-growth, fish and wildlife, and recreation are as important as logging and roads and should never be sacrificed for the logging industry.

Response #1021

Old growth, fish and wildlife and recreation are important as is the wood gained from logging. The National Forests were created to provide a variety or resources that meet the needs of the American public

Topic #1022

Clearcutting will increase stream temperatures

Response #1022

Clearcutting along streams over certain distances, depending upon slope gradient, distance, aspect and time of year can result in an increase in stream temperature. Stringent standards and guidelines developed by the Forest as a result of public comment regulate the type and amount of timber harvest that can occur in these areas to maintain cool stream temperatures. Timber harvest will not occur within the stream-side management zone unless it benefits riparian area dependent resources or for incidental needs such as road crossings and cable corridors

Topic #1023

Include the description of Lahontan cutthroat trout in the management area designation for the lower end of Carpenter Valley. At least in the designated area on page R.30. Perhaps the simple way to do this would be to extend "044" to include what is now '053' on that page.

Response #1023

Prosser Creek, which flows through the Carpenter Valley, has no pure documented strain of Lahontan cutthroat trout. The Valley is privately owned (only 5% of management area 053 is National Forest sys-

tem land), and use of the Lahontanas a fish indicator species would have little additional benefit.

Topic #1024

The plan should clearly describe specific objectives for all threatened and endangered, candidate and USFS sensitive species. Provide monitoring standards and plans for all indicator species and indicate how habitat for each indicator species will be maintained and enhanced. Species in upper Independence Creek watershed and protection of Lahontan cutthroat trout.

Response #1024

See Wildlife Responses W038, W039, and W059.

Topic #1025

Lahontan cutthroat trout are vulnerable to displacement by introduced fish and depletion by angling. The Plan would sufficiently increase visitor use at Independence Lake and make transport of live fish to the upper reaches of Independence Creek easier. It is remote and isolated and law enforcement would be difficult. Upper Independence Creek watershed (sec.8,T18N,R15E) is ideal for designation as Research Natural Area or Special Interest Area Consultation, pursuant to sec. F of the Endangered Species Act, should be initiated with our office on any activity authorized by the Plan that would be likely to adversely affect Lahontan cutthroat trout

Response #1025

See #W104. We will consult with you on activities that might affect the Lahontan cutthroat trout, and will meet our responsibilities for the protection of the habitat for this threatened species.

Topic #1026

Independence Creek watershed must be protected from management activities (development, timber harvesting or grazing) which may affect water quality because the headwaters of Independence Creek are critical to maintenance of viable populations of Lahontan cutthroat trout.

Response #1026

See Wildlife response W104 and Fisheries response 1025.

Topic #1027

Section 8 of Independence Creek possesses all spawning and nursery habitat and is the only self-

sustaining, non-introgressed, endemic lacustrine stock remaining in California and the only verified example of the Truckee River system race of Lahontan cutthroat trout in existence. In addition White-rock allotment should not be reopened to sheep and cattle. Independence Creek watershed should be considered for special interest area or research natural area designation.

Response #1027

See response to #W104, G008 and N001.

Topic #1028

Lahontan cutthroat trout habitat in the headwaters of East Fork Creek within Austin Meadows is being degraded by stream bank erosion (Pinoli Management Area) Erosion control structures should be established and provide riparian fencing. Particularly sensitive area because of the presence of alluvium and volcanic soils - vulnerable to gully and sheet erosion. Gully control and bank erosion control efforts begin to produce improvement in quality of Lahontan Cutthroat trout spawning habitat.

Response #1028

Currently, we have developed a stream restoration plan for this area of Austin meadows and have received funding from the California Department of Fish and Game to implement the project work. Included in the restoration effort was the development of a meadow management plan that will allow greater control with the allotment. The project proposes to install rock check dams, large woody debris and willow clumps to encourage accelerated healing of the area. Also included is a single strand solar powered electric fence to be run around the improvements to discourage cattle aggregation in these areas.

Topic #1029

Lahontan cutthroat trout management plan prepared by Department of Fish and Game recommends sec 8. be retained in public ownership in undeveloped state. The Department recommends considering remainder of upper Independence Creek watershed for acquisition.

Response #1029

See Wildlife response #W005.

Topic #1030

High mountain meadow streams that are sensitive and important to trout populations must be com-

Wildlife (Fisheries)

pletely excluded from grazing. In some cases riparian fencing can work.

Response #1030

See Water response #H001 and Grazing response #G001

Topic #1031

Grazing near streams and wetlands should be prohibited to protect the fisheries and riparian habitat.

Response #1031

See Grazing Response #G001

Topic #1032

Department of Fish and Game recommends excluding livestock from the watershed of Independence Creek upstream from the lake if the White Rock allotment is reopened. The glacial alluvium and volcanic soils are particularly vulnerable to gully and sheet erosion.

Response #1032

See Grazing Response #G008.

Topic #1033

Mining is an United States citizens legal right. Suction dredging flushes the systems and increases food for fish and will help rivers and streams remain clean and purified.

Response #1033

The effects of suction dredging on aquatic ecosystems have been studied intensively in the past 5-10 years. Reports in the literature are varied as to the detriment or benefit from this activity on the fisheries resources. Several factors, including current and potential sediment loads in the system, intensity of use (how many in one area), season of use (conflicts with spawning periods of fish) and health of the existing fishery all determine the extent of effect on the system. Sediment introduction to the water column, during low flow periods can be devastating to the aquatic resource.

Topic #1034

Amenity Alternative E. People are surprised that zero acres are planned for Fish and Wildlife habitat improvement. It is difficult to believe that Alternative E has lower acres of 'water quality at standard' than Alternative A. Is Amenity Alternative truly developed with amenity emphasis?

Response #1034

The amenity alternative was developed with non-commodity emphasis, however, the lack of fish and wildlife habitat improvements was an oversight and should have been included. For a response on the water quality comment, please see Topic #HO24

Topic #1035

Alternative D puts emphasis on road construction, impacts on stream-side habitat and grazing. This alternative is not in the best interest of fish and wildlife species.

Response #1035

A review of table 2.17 (DEIS) shows that Alternative D provides the highest outputs (both direct and induced) for fisheries and wildlife. In addition, road construction is also highest, to reflect the increased timber volumes anticipated under this alternative. Range values for this alternative are considerably less than with other alternatives. Impacts from road construction and timber harvest will be minimized by subscribing to stricter standards and guidelines and adhering to Best Management Practices.

Topic #1036

They express serious reservations about the model's and database's ability to provide valid projections on impacts to fish and wildlife resources.

Response #1036

We can not answer this comment; we would need more specific information about the concern. In general, however, impacts for the resources are predicted by the Forest interdisciplinary team members, using information gained from experience, professional judgment, models, and other predictive tools.

Topic #1037

Please ensure that fish and wildlife and the forests are protected and enhanced.

Response #1037

Thanks - we share your concern.

Topic #1038

Provisions for fishery protection are inadequate in the Plan, and there is concern about change in quality of fisheries.

Response #1038

Further refinement of standards and guidelines relating to timber harvest and reforestation activities, and the development of the variable width SMZ will serve to protect the aquatic resources.

Topic #1039

California Fisherman Unlimited is concerned with impacts of the Plan on trout streams and the future of the wild trout resource.

Response #1039

The Forest has adopted more stringent standards and guidelines relating to Streamside Management Zone prescriptions. Timber harvest will not occur within the SMZ unless it benefits the riparian area dependent resources. Wild trout resources will continue to be managed as a priority on the Forest. Hatchery augmentation will occur where it currently exists. Streams considered for stocking will first be studied by the California Department of Fish and Game and the Forest Service. Habitat enhancement opportunities will be pursued aggressively under the 'Rise to the Future' national action initiative.

Topic #1040

There is a need to protect coldwater streams with plenty of shade, vegetation, bugs and trout.

Response #1040

The Forest has adopted more stringent standards and guidelines relating to Stream-side Management Zone prescriptions. Timber harvest will not occur within the SMZ unless it benefits riparian area dependent resources, such as water quality, wildlife, recreation and fisheries. Wild trout resources will continue to be managed as a priority on the Forest within the stream systems.

Topic #1041

Fish and wildlife resources are a vital component of Sierra County's natural and economic environment. Management for fish and wildlife doesn't preclude resource extraction so long as sensitive areas are maintained and enhanced for fish and wildlife values.

Response #1041

We agree.

Topic #1042

All future road construction should be designed and evaluated with regard to effects on fish and wildlife. Roads not vital to activities should be closed.

Response #1042

One component evaluated during road planning, design and construction is wildlife. Often, roads are closed if there is no overriding need, such as road access for fire fighting, or public recreation.

Topic #1043

Page 244 of the Preferred Alternative notes that trout population will go up by 20% and provide 8,560 acres of improved fish habitat. There is no adequate information on these figures, where and how improvements occur, and the cost. Was watershed degradation resulting from upland disturbing activities taken into consideration when fish production improvement predictions were made?

Response #1043

Fish production estimates were made based on Regional guidelines that assigned an assumed level of biomass per quality designation of stream. Habitat improvements were assumed to elevate the quality, resulting in a predicted increase in biomass. It was assumed that adherence to Best Management Practices and stringent standards and guideline within the stream-side management zones would protect the aquatic environment. Monitoring will determine the accuracy of these predictions as they relate to habitat improvement opportunities.

Topic #1044

Fish habitat effectiveness should be reported in 5 years and 30% change from normal is way too high to catch a problem before going too far.

Response #1044

Fish population changes in relation to habitat improvements will be monitored every year for ten years in order to discern the effects of the improvements on the population. Recent literature indicates wild fluctuations in population levels in controlled systems, inferring that many factors other than habitat composition play a role in regulating the population.

Wildlife (Fisheries)

Topic #1045

All alternatives fail to set forth realistic balanced and feasible fish and wildlife programs

Response #1045

We don't agree. We feel we have built into the Final Plan (and preferred alternative) an implementable plan which will serve as the basis for fish and wildlife programs during the planning period. See Wildlife Response #W038.

Topic #1046

The Plan and EIS should contain thorough discussion of impacts on water quality of fish habitat.

Response #1046

Discussions of potential impacts are contained within the FEIS. It is also assumed that Best Management Practices, along with stringent standards and guidelines will protect water quality and fisheries habitat.

Topic #1047

Department of Fish & Game recommends that activities be excluded from section 8 (Castle Unit, Independence Lake).

Response #1047

At this time, no specific activities have been approved for Section 8 in the Castle Unit. An environmental analysis will be conducted in compliance with NEPA if a site specific proposal is considered. We are well aware of the importance of this area to the federally listed threatened Lahontan cutthroat trout, and will uphold our responsibility to protect its habitat.

Topic #1048

Section 8 incorporates one of the last undeveloped small stream valley ecosystems on the TNF and supports a rich variety of life

Response #1048

See Response #1047.

Topic #1049

The Truckee River is overfished, banks are lined with people fishing, sitting in lounge chairs etc., many of them polluting the river with garbage

Response #1049

The Truckee River is a popular recreation area on the Tahoe National Forest. Because of the increased demands of this resource by the public, over fishing and refuse disposal become problems. This area is stocked by the California Department of Fish and Game and the Forest is doing its best to manage the other problems. It will take a strong resource awareness program to educate the public to their impacts in this system. Through this avenue we can expect a reduction in the problems that you have stated.

Topic #1050

The Tahoe National Forest should work more closely with California Department Fish & Game to eradicate trash fish in the lakes. It is my understanding that 1/3 of the 30 lakes in the area are infested with Golden Shiners and Brown Bullheads which have displaced trout

Response #1050

The Forest does work in coordination with the Department of Fish and Game in managing the fisheries resource on Forest. We review all cooperatively funded habitat enhancement projects with them, in addition to working with the US Fish and Wildlife Service and State Water Quality Control Board. Poisoning lakes of non-game species is a sensitive issue, and needs to be explored with all agency involvement. Other means of eradication, such as introduction of biological controls (predator game fish) and education of anglers as to the problems of illegal introductions are other possible solutions.

Topic #1051

The Tahoe National Forest does not discuss impacts of logging and roads on fisheries and primitive quality of a Wild Trout Stream. Lack of discussion of impacts is in noncompliance with section 102C(l) of NEPA. The Forest Service should present a detailed and thorough assessment of potential impacts of logging and road construction on the Wild Trout fishery

Response #1051

A thorough analysis will be given in the project level environmental analysis, which will be conducted in compliance with NEPA. At that time, the specific alternatives will be known, and the site specific impacts of various activities can be estimated. There will be public involvement with this environmental analysis.

Topic #1052

Clearcutting in the North Fork of the American River is opposed because of the designation of State and Federal Wild and Scenic River, and State Wild Trout Stream

Response #1052

Based on public concern, the designation for the major portion of this area has been changed to Semi-Primitive Non-Motorized, including most of the area on the south side of the river. Most of this area lies in the steep canyons and is inaccessible to timber harvest. Areas designated as Semi-Primitive Non-Motorized are now considered unsuitable for timber harvest

Topic #1053

Visual degradation is not consistent with the Wild Trout Management Plan, 'management of the North Fork of the American River will also emphasize maintenance of the remote secluded quality of the angling experience, which generally involves minimizing angler encounter with man's activities'.

Response #1053

See Response #1052.

Topic #1054

Opposed to clearcutting in North Fork American River canyon because of destruction of fisheries.

Response #1054

Potential impacts on fisheries from timber harvest activities have been eliminated by changing the area designation to Semi-primitive Non-Motorized. This area is considered unsuitable for timber harvest

Topic #1055

Logging the small amount of timber in this area is not cost effective and is not worth the risk of ruining one of our last remaining pristine rivers.

Response #1055

See Responses # 1052, 1053, and 1054.

Topic #1056

The changed management emphasis on the North Fork American River is puzzling and the Department of Fish & Game questions whether the change is warranted or desirable

Response #1056

The designation for the major portion of this area has been changed to semi-primitive nonmotorized. Areas designated as Semi-Primitive Non-Motorized are now considered unsuitable for timber harvest. This direction is in conformance with the established management plans for this canyon.

Topic #1057

The Fish & Game Department's 1977 waterway plan recommended that resource use not conflict with public use and enjoyment of the river and that basic environmental values of the North Fork American River Canyon should not be adversely affected

Response #1057

See Response #1094.

Topic #1058

In order to resolve apparent conflicts we recommend that lands along the south slope of the North Fork American Canyon below the canyon rim be managed for nonintensive timber management with partial cutting practices. If roads are constructed at all, they should be limited to narrow, low impact roads confined to the top one-fourth of the canyon slope. Timber harvesting should be limited to systems involving less vegetation removal and clearcutting and associated site burning should not be permitted below the canyon rim. Yarding utilizing long-span skyline systems with lateral yarding capabilities would permit partial cutting according to your draft plan. Proposed visual quality Objectives of 'modification' should be replaced with 'retention' objectives.

Response #1058

See Response #1094

Topic #1059

Sections 3.39 and 4.30 of the DEIS violate 40 CFR 1502.15 and 1502.16 by failing to adequately discuss and disclose the effects of current and proposed management practices on maintenance of fish habitat.

Response #1059

Chapter 3 describes the affected environment, as directed in 40 CFR 1502.15. Chapter 4, as directed in 40 CFR 1502.16, discusses the environmental consequences. 40 CFR 1502.15 also states ". verbose descriptions of the affected environment are no measure of adequacy of the document..",

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and 40 CFR 1502.76 states "no longer than necessary to understand the effects of the alternatives...". Site-by-site specifics can only be evaluated on a *project-by-project* basis. The Forest plan cannot be specific to project-level planning. Also see Response #1051.

Topic #1060

Activities such as road-building, logging and mining are causing significant damage to the fisheries resource on the TNF. Some of streams where this damage has occurred include:

Rock Creek - 5 Mile Timber Sale (clearcuts over fish streams, riparian damage)

Wolf Creek - Blackwolf Timber Sale (same, no over-story left for stream)

Deer Creek - Pride Timber Sale (no BMPs implemented)

Holden Spring Creek - Grizzly Timber Sale (clearcut to stream on steep slope)

Lavezzola Creek - Mining activity (periodic major sediment in creek)

Response #1060

BMP's are effective only if fully implemented through the course of any forest *activity*. The Tahoe NF is determined to learn from past errors and committed to forest-wide application of *BMP's*, such as adoption of Stream Management Zone (SMZ) guidelines as proposed in the Final Land Management Plan. Also see Responses #1013 and #1016.

Topic #1061

The document fails to discuss and disclose the details to support the allegation that the 'fish habitat improvement program' could 'increase rainbow, brown, and brook trout by 104,000 pounds'.

Response #1061

See Response #1043

Topic #1062

The document must compare the effects of a true 'no action' alternative with the effects of other alternatives specifying varying levels of logging and road construction on fish habitat.

Response #1062

The No Action alternative is the *CUR*, or commodities alternative, and reflects the impacts of no change from current land management direction

that *includes pre-established* levels of timber harvest and roading activities

Topic #1063

Suggested Prescriptions For Type A Streams:

- 1) A VQO of retention should be maintained within the foreground as viewed from both the stream and access roads along the stream. A VQO of partial retention should be maintained in the middle ground. Middle ground distances may vary from a few hundred yards to a half mile or more. Special cutting (individual tree selection) may be permitted in retention view zones. Within middle ground view zones, partial cutting methods may be used i.e. individual tree selection and group selection, *shelterwood* cutting and small patch cuts generally less than 5 acres.
- 2) A variable width SMZ should be maintained along all Type A streams. Where soils, slopes and streambanks are stable the width could vary from 200-300 feet either side of the water's edge. Where unstable conditions exist, the width could vary from 300 to 600 feet plus. Within this SMZ ground cover density should not be reduced below 60 percent for stable watershed conditions and 70 percent for all other conditions. Partial cutting is permitted within the SMZ except within the first 100 feet where old growth as well as dead dying trees will be left for snag dependent *wildlife* and to provide large woody debris recruitment to the stream channel.

The following Type A streams occur in the Tahoe National Forest.

- 1) North Fork Yuba River, from Yuba Pass to Cherokee Creek
- 2) Salmon and Sardine Creeks, within Sierra Buttes Recreation Area.
- 3) Middle Fork Yuba River, from Milton Reservoir to Jackson Meadows Reservoir.
- 4) South Yuba River, Washington to Canyon Creek and Lake Norden to Lake Spaulding
- 5) Middle Fork American River, French Meadows Reservoir to Talbot Camp
- 6) Truckee River Lake Tahoe to Donner Creek.
- 7) Little Truckee River, Independence Creek to Boca Reservoir.

- 8) Smithneck Creek, Lewis Mill Station to Badenaugh Canyon.
- 9) Sagehen Creek, entire length.
- 10) Haypress Creek, below Wild Plum Campground and within Haypress Meadows.
- 11) Cold Stream Creek, Onion Creek to Canyon Ranch.
- 12) Alder Creek, Tahoe-Donner boundary to Prosser Reservoir.
- 13) Bear Creek, Deer Park to Truckee River.
- 14) Lavezzola Creek, Empire Ranch to Downie River.
- 15) Independence Creek, Independence Lake to **Russel** Ranch.
- 16) Downie River, from Daves Ravine to the North Fork Yuba River.
- 17) Bonta Creek, above Cold Stream Creek.

Suggested Prescriptions For Type B Streams:

- 1) A VQO of retention should be maintained within the foreground of the stream and trails paralleling the stream. Where steep canyons exist or very scenic settings occur, retention should be extended to the middle ground. The same silvicultural methods and criteria **use** for type A streams should be applied to Type **B** streams except that roads should not be used for timber access in unroaded canyons. Aerial methods such as helicopter or long span skyline yarding from ridge top roads and partial cutting would be the preferred method of timber harvesting in steep canyons.
- 2) The SMZ width will vary from 300 to 600 or more feet with no timber removal occurring within 100 feet of the water.

The following Type B streams were identified in the Tahoe National Forest:

- 1) Downie River, Rattlesnake Creek To Daves Ravine and Rattlesnake Creek, from Clarks Canyon to Downie River.
- 2) Canyon Creek, Poker Flat to East Fork.
- 3) Lavezzola Creek, Sunnyside Creek to Empire Ranch.
- 4) Pauley Creek, Gold Valley to Lavezzola Creek.
- 5) Lincoln Creek, Lincoln Valley to N.F. Yuba River.
- 6) Fordyce Creek, Fordyce Lake to Lake Spaulding.
- 7) Canyon Creek, Bowman Lake to South Yuba River.

- 8) North Fork American River, Heath Springs to Giant Gap protected by wild river corridor.
- 9) Little Granite Creek, Cherry Point to North Fork American River.
- 10) Fiddle Creek, Bow Creek to N.F. Yuba River

Suggested Prescriptions For Type C Streams

- 1) A VQO of retention should be maintained within the fore and middle ground of the stream to preserve primitive settings.
- 2) In steep canyons no timber removal should occur within 600 feet of the water except for helicopter removal of dead and diseased trees.
- 3) No roads should be constructed in steeper portions of the canyon, slopes over 50%. Roading and timber cutting should be confined to upper slopes of the canyon.

The following Type C streams were identified in the Tahoe National Forest:

- 1) Canyon Creek, Poker Flat to North Yuba Rwer.
- 2) Middle Yuba River, from a point one mile below Milton Reservoir to Woolsey Flat.
- 3) South Yuba River, Washington to BLM boundary.
- 4) North Yuba River, Cherokee Creek to New Bullards Bar Reservoir
- 5) North Fork of North Fork American River, North Fork Campground to North Fork American River and the East Fork below Tunnel Mills Campground.
- 6) West Branch of Eldorado Carson, from the Sunny South site to mouth.
- 7) East Branch of Eldorado Carson, national forest land boundary to mouth.
- 8) North Fork of Middle Fork American River, Screwauger Canyon to Mosquito Road bridge.
- 9) Middle Fork American River Canyon, French **House** to Ralston Afterbay.
- 10) Duncan Creek, below French Meadows road
- 11) Big Granite Creek, headwaters to mouth.
- 12) Palisade Creek, headwaters to mouth
- 13) East Fork Creek, above Poorman Valley.
- 14) Rubicon River, Miller Creek to Hell Hole Reservoir

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Recommended Prescriptions For Type D Streams:

The following SMZ's should be established on these streams and lake shores

Guidelines for Establishing SMZ's

Stream Stability 1/ Recommended With From Streambank Class Soil/Slope Perennial Intermittent

I Stable 200-300 150-250 Unstable 300-600+ 250-500+

II Stable 100-200 100-150 Unstable 200-400+ 150-300+

III Stable 100-150 100-100 Unstable 100-250+ 100-200+

1/ Within the SMZ ground cover density shall not be reduced below 60 percent for stable watershed conditions and 70 percent for all other conditions.

Within SMZ's all cutting methods are permitted except that no timber removal would occur within 100 feet of perennial streams, or within 50 feet of intermittent streams. Non-merchantable vegetation should be retained within 50 feet of ephemeral water courses.

Type E Streams

These are waters supporting threatened coldwater fishes or waters proposed for introduction of cold-water fishes.

Prescription: Type D prescriptions should be adequate. In meadow situations where significant streambank erosion has occurred elimination of livestock from riparian areas and initiation of a stream banks erosion control programs are recommended.

The following are Type E streams in the Tahoe National Forest.

- 1) Macklin Creek.
- 2) East Fork Creek within Austin Meadow.
- 3) Unnamed tributary of East Fork Creek.
- 4) Perazzo Creek above falls.
- 5) Pole Creek.
- 6) Independence Creek, above Independence Lake.

Aquatic RNA designation is recommended for the latter.

Rational for not removing timber from within 100 feet of perennial streams.

- 1) Old growth timber retention is needed for recruitment of snags and large woody debris needed for streambed complexity.
- 2) Timber harvesting along stream banks has resulted in riparian areas becoming more vulnerable to incineration during broadcast burning.
- 3) Retaining full canopy of trees maintains attractive setting for stream-side recreationists.
- 4) Uncut strips of timber are more effective in filtering sediment from upslope management activities than selectively cut strips.

The draft EIS of the Sequoia National Forest Land and Resource Management Plan estimates that uncut SMZ's along streams will trap 95% of the sediment from upslope erosion, while partially cut SMZ's will only trap 70% (see page 4-96 of unclosed copy)

Response #1063

The Forest is continuing with the Regional stream classification system as directed by policy. The Forest has adopted the variable width Stream-side Management Zone concept as developed by neighboring Forests and suggested by you. The standards and guidelines for the SMZ's have been made more stringent. The classification of the timber component in perennial SMZ's has been changed to incidental or minor yield or intensity of timber management, limiting timber harvest to activities that will benefit riparian dependent resources such as fish, wildlife, and water quality

SPOTTED OWLS

Topic #O064

Selective cutting of old growth will save spotted owls

Response #O064

Site-specific management plans will be developed for every spotted owl management area. Even-aged as well as uneven-aged management prescriptions will be considered when developing these plans. In all cases, at least 1,000 acres of suitable owl habitat will be maintained as prescribed on pages 4-76 to 4-18 of the Regional Planning Guide.

Topic #O065

A targeted research and monitoring system should be established for spotted owls.

Response #O065

The Forest Service recently completed the second year of the spotted owl Research, Development, and Application Program (RD&A). The program includes large research and monitoring components. The RD&A Program is being completed throughout Washington, Oregon, and California where spotted owls occur.

Topic #O066

The proposed plan will cause extinction of the spotted owl.

Response #W066

The Forest has established a network of spotted owl habitat areas (SOHA's) in the Forest Plan that complies with owl management direction for the Pacific Southwest Region of the Forest Service. Regional owl management direction is expected to preserve viable populations of the species in California over time.

Topic #O067

MMR's adequately protect the spotted owl.

Response #O067

We agree. The MMR's were established to provide for the maintenance of viable spotted owl populations.

Topic #O068

Spotted owls should be protected.

Response #O068

We agree and have implemented a network of 33 spotted owl habitat areas for protection of this species.

Topic #O069

More spotted owl habitat should be preserved than prescribed by the draft plan.

Response #O069

The draft Plan proposed a network of 33 spotted owl habitat areas (SOHA) Thirty-two of these areas were located on lands capable of producing commercial timber (one was located in the wilderness). The final Forest Plan provides 33 SOHA's within lands potentially available for timber production. Cumulatively, the 33 SOHA's have reduced the annual timber production by about 25 million board feet. Each additional SOHA would reduce timber production by roughly 0.75 million board feet per year. Since the production of commercial timber is a purpose of the National Forest System and is important to the local and National economies, the Forest has determined that the SOHA network in the Forest Plan represents a reasonable balance between protection of spotted owl population and production of commercial timber.

Topic #O070

Less spotted habitat should be preserved than prescribed by the draft plan.

Response #O070

The draft Plan proposed a network of 33 spotted owl habitat areas. The Forest does not believe that reducing the number of SOHA's is desirable because: 1) 32 of the sites are needed to comply with minimum management requirements for spotted owls in the Pacific Southwest Region, and 2) 1 additional SOHA is needed to mitigate problems with owl pairs on the Sierraville Ranger District.

Topic #O071

Estimates of owl populations may be wrong. This will influence whether the plan will reduce owls over time or maintain them at current levels.

Response #O071

We agree. Following extensive fieldwork in 1987, current owl numbers on the Forest are now believed to be roughly 110 pairs. The number of pairs is expected to decline considerably with most alternatives as described in Chapters 2 and 4 of the Final Environmental Impact Statement.

Topic #O072

The spotted owl issue must be solved by close coordination between wildlife and timber management interests and decisions must be based on continuing research and monitoring.

Response #O072

We agree. The Forest Service recently completed the second year of a five-year Research, Development, and Application Program that is intended to improve knowledge and management of the spotted owl in California, Oregon, and Washington. Timber and wildlife management interests are both involved with this project.

Topic #O073

Spotted owl territories should be located in areas that provide the least impact to timber and other resource programs.

Response #O073

The existing Forest SOHA network was developed around the locations of known owl pairs. Since owl surveys were often conducted from roads built for logging access, some SOHA's were established around owls that live in lands with high timber production potential. Adjustments to areas that accommodate owls with less impacts to timber production are incomplete at this time. As opportunities for more fieldwork arise, new owl pairs will be discovered in areas that have less impacts to other resource programs. Appropriate adjustments to the SOHA network will be made at that time to minimize impacts on the timber program while protecting owl populations.

Topic #O074

The Forest matrix should be incorporated into the wildlife element map and prevailing regional direction for spotted owl management be brought forward into the Forest Plan.

Response #O074

The Forest SOHA Network and the Regional planning direction are in the Forest Planning file. The direction is too lengthy for complete inclusion in the Forest Plan. Copies of the network map and the regional owl management direction are available upon request.

Topic #O075

The effects of managing spotted owl above the MMR level and clearcutting on spotted owls have not been adequately discussed in the DEIS.

Response #O075

The effects Forest Plan alternatives on spotted owls has been reanalyzed and the results are presented in Chapter 4 of the EIS.

TOPIC #O076

Table V.3 suggests that about 6,200 acres under the wildlife categories will be available for timber harvest. Does this mean that only 6.2 SOHA's will be located on CAS lands?

Response #O076

No. As described on page V4 of the DEIS, the acres shown in Table V 3 are those upon which which direct wildlife habitat improvement projects would be permitted in addition to timber harvest. These acres might include lodgepole removal, thinnings, etc. Thirty-three SOHA's totaling about 87,500 acres will be located on CAS lands. Within these acres, at least 33,000 acres of suitable owl habitat will be maintained at all times.

Topic #O077

The DEIS does not include the latest data for spotted owls.

Response #O077

The FEIS has been revised (see the WILDLIFE sections of Chapters 3 and 4) to include updated information about spotted owls.

Topic #0078

The DLMP does not provide details about how owl areas will be managed.

Response #0078

The principal management focus in spotted owl management areas (SOHA's) will be spotted owl habitat. All activities within the SOHA must be consistent with the habitat needs of the owls. Details regarding site-specific management will be described in SOHA plans for each area. The direction for preparation of SOHA plans is currently being developed for the Pacific Southwest Region. Some SOHA plans on the TNF are expected to permit timber harvest over time. However, most are anticipated to involve no scheduled harvest of commercial timber.

Topic #0079

How will the Forest SOHA network ensure population viability for spotted owls.

Response #0079

The Spotted Owl Habitat network (SOHA) in the Forest Plan was developed using the owl management direction for the Pacific Southwest Region. The aggregate of Forest networks throughout the Region have been organized to maintain species viability in the spotted owl.

Topic #0080

Exemption of acreage dedicated to spotted owls are curtailing timber production, resulting in mill closures and unemployment.

Response #0080

We recognize that a reduction of land base allocated to timber production exists due to the spotted owls but do not agree that the reduction is causing mill closures and unemployment.



Bowman Road construction camp, Fuller Lake, 1923

TAHOE NATIONAL FOREST

APR 21 1986

18 APR 1986

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, CA 94105

Geri B. Larson, Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, California 95959

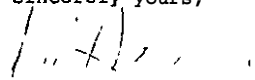
Dear Ms. Larson:

The Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact statement (DEIS) titled TAHOE NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN: SIERRA, NEVADA, PLACER and YUBA COUNTIES, CALIFORNIA. We have the enclosed comments regarding this DEIS.

We have classified this DEIS as Category EC-2, Environmental Concerns - Insufficient Information (see attached "Summary of Rating Definitions and Follow-UP Action"). This DEIS is rated EC-2 because it projects that Forest activities such as timber harvests and vegetative type conversions will degrade water quality over the planning period. EPA suggests that the timing and guidelines applied to these activities be modified in order to protect water quality. The classification and date of EPA's Comments will be published in the Federal Register in accordance with our public disclosure responsibilities under Section 309 of the Clean Air Act.

We appreciate the opportunity to review this DEIS. Please send three copies of the Final Environmental Impact Statement (FEIS) to this office at the same time it is officially filed with our Washington, D.C. office. If you have any questions, please contact Juli Jessen, Federal Activities Branch, at (415) 974-8193 or FTS 454-8193.

Sincerely yours,



Charles W. Murray, Jr.
Assistant Regional Administrator
for Policy and Management

Water Quality Comments

1. The DEIS states that the Best Management Practices (BMPs) identified in "Water Quality Management for National Forest System Lands in California. (the §208 Plan) are the means for maintaining water quality on the Tahoe National Forest (TNF). The 1981 Management Agency Agreement between the State Water Resources Control Board (SWRCB) and the Forest Service certified that the BMPs developed in the §208 Plan would constitute sound water quality management and that implementation of these practices would constitute compliance with substantive and procedural requirements of State water pollution control law as mandated by §313 of P.L. 95-217. It should be noted, however, that implementation of BMPs does not constitute compliance with water quality standards per se. In the event that a TNF project, undertaken with OR without appropriate BMPs, creates a water quality problem or causes a standards violation, the State and Regional Boards retain the authority to carry out their responsibilities for management of environmental quality.
2. Each alternative projects a decline in the amount of water which meets water quality standards over the 50 Year planning horizon (p. 2.119, Table 2.17). EPA is concerned about this trend and suggests that the forestwide standards and guidelines be established to prevent such degradation. The FEIS should explain how these water quality standards compliance figures are derived.

The DEIS suggests (p. 4.104) that declining conditions "would not harm beneficial uses.. This is an important consideration. However, compliance with the antidegradation policy is another important factor to be evaluated. The California antidegradation policy specifies that "where the existing quality of the water is better than the standards set, that such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies." This policy is reiterated in Federal regulations (40 CFR 131.12 (a.2)). The FEIS should evaluate the projected degradation in terms of this policy. Also the FEIS should describe those areas where it is anticipated that water quality may deteriorate.
3. The water quality monitoring proposed on pages VI.19 and VI.21 (FO9 291 and 292) appears to be adequate to determine whether BMPs sufficiently mitigate adverse water quality impacts from Forest activities. EPA recommends that implementation of BMPs and results of monitoring be documented in order to study both site-specific results and general effectiveness of BMPs. It may be most appropriate to focus these

Enclosure (6 pages)

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studies on several representative watersheds. We are pleased with Water quality maintenance and monitoring programs presented in the Plan, and would like to see the results.

4. Because of the land ownership pattern on the TNF, there appears to be significant potential for cumulative impacts from private and National Forest activities. The FEIS should discuss how water quality may be affected by activities such as water yield increases, timber harvesting, and grazing in multiple ownership watersheds. It also should include a plan for timing forest activities to avoid compounding adverse water quality impacts from private lands. Perhaps Guideline FC1a (p. v.36) could be expanded to direct forest management in multiple ownership situations.
5. Table 2.18 (p. 2.123) lists the "Percentage of Forestwide Cumulative Watershed Impacts Acreages." The FEIS should explain how this figure is derived and how it is linked to water quality. The discussion should compare alternatives and show why the Preferred Alternative (A) will cause impacts as great as the High Timber/Range alternative (H). Because water quality impacts from cumulative watershed damage could be significant, EPA encourages TNF to select an alternative which minimizes these impacts.
6. Several alternatives, including the Preferred Alternative, propose vegetative type conversion in order to increase water yield and grazing capacity. According to the DEIS (p. 4.73) this practice may degrade soil conditions. Such impacts should be discussed more fully in the FEIS and specific water quality impacts, such as nutrient loadings (nitrogen and phosphorus) in adjacent watersheds, should be projected. This discussion should include impacts on beneficial uses, particularly short-term fisheries impacts from increased sedimentation. The FEIS should describe how sites are selected for conversion, including required information on water and soils, and the methods employed to accomplish conversion. If herbicides are used to ensure that brush species do not invade the site, impacts of this practice should be explained. This should include a discussion of the fate of herbicides used in both prescribed burns and normal nutrient cycling.
7. The DEIS indicates (p. 3.51) that research is necessary to evaluate site potential of the eastside pine forest type for dual use for timber and forage. The FEIS should state whether these studies will be completed before type conversion is scheduled.

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8. In discussing consequences to soils from each alternative, the DEIS shows (p. 4.73) that the high level of Forest activities has the potential to reduce Soil productivity. The DEIS should discuss short-term and long-term water quality effects from soil degradation. If watershed damage is indicated during Plan implementation, EPA suggests that Forest should slow the rate of the activity causing the damage or implement more stringent standards and guidelines.

To help reduce the potential for watershed degradation, the forestwide standards and guidelines should restrict practices which adversely impact watershed and riparian conditions. In particular, the guideline for protection of sensitive soils (p. V.34) should be reevaluated. This guideline currently indicates that any type of cutting is permissible where watershed protection objectives can be met. It focuses on estimating the amount of board feet that can be harvested and does not direct itself to the principle problem of cover removal and direct disturbances from the method of harvest. Because such guidelines will not provide adequate water quality protection, EPA recommends that TNF reconsider the standards and guidelines and place more emphasis on resource protection.
9. The DEIS acknowledges the importance of riparian habitat (p. 3.59), yet most alternatives, including the Preferred Alternative, threaten to degrade these areas. For example, the DEIS states (p. 3.58) that "It is questionable whether streamside management zones (SMZs) can be protected adjacent to intermittent and ephemeral streams on steeper ground" and (p. 4.72) that the Preferred Alternative has "moderate to high Potential to damage SMZs and the aquatic ecosystem." Where such uncertainties arise, EPA recommends that the Forest Plan limit activity and protect the riparian area. The standards and guidelines should more specifically direct activities such as construction, timber harvest, and grazing in riparian areas. It is impossible to analyze the adequacy of the Current guidelines because most activities are deferred to case-by-case evaluation. The FEIS should indicate whether the projected riparian degradation was considered in projecting water quality degradation over the planning period.
10. In revising the DEIS, it would be appropriate to coordinate water quality and beneficial use definitions with those contained in the appropriate Basin Plans of the Regional Water Quality Control Boards.
11. If the TNP has a Watershed Improvement Needs List, it should be included in the Final Plan/FEIS package. EPA recommends that improvement of watersheds in poor condition be a Priority on the Forest.

Timber Comments

1. Figure 3.3 (p. 3.681 shows that there is much uncut timber volume under contract. Though the DEIS discusses multi-year extensions and buy-out opportunities, it does not address whether this situation has influenced or been incorporated into any of the alternatives. The PEIS Should explain the impacts of the uncut volume, including whether they affect the size of future allowable sale quantities (ASQ), how they are considered in present net value calculations, and why TNP continues to offer ASQs well in excess of the demand for harvest. This discussion should address the timing of harvests in a watershed and the potential for adverse water quality impacts from harvest of several years' ASQs in one season. If a surge of harvest activity is possible, the PEIS should explain how this will affect growth, yield and age class diversity on the Forest.
2. In conclusions of the Benchmarks section, the DEIS refers to a link (p. 2.81 between timber and water. The FEIS should describe this link.

Range comments

1. EPA commends the Preferred Alternative's deferral of increases in grazing use for two decades, (Table 2.5, p. 2.47) The initial decrease from current levels, followed by small increases, should allow an opportunity for improvement in the large amount of rangeland classified as "fair-but with a stable trend."
2. The FEIS or its appendix should describe "fair range condition" in terms of soil erosion loss and water quality impacts.
3. The DEIS States (p. 3.59) that riparian areas account for grazing use well beyond their 4% of the land base. The FEIS should report the amount of AUMs on the Forest contributed by riparian areas. It should also describe how grazing has impacted these areas and discuss impacts to riparian areas from projected grazing increases.
4. In order to allow an adequate analysis of alternative range plans, the various alternatives should propose markedly different grazing levels. Alternative A shows a very high level of range use, but no alternative is significantly lower than the base year figure of 20,000 animal unit months. If one alternative were modeled with much lower range outputs, it would allow comparison of the benefits and impacts associated with this activity.

Herbicide Comment

Although specific vegetative management practices are planned near the time of application, it would be appropriate for the PEIS to explain the general nature of herbicide use on the TNF. This discussion should include the the guidelines used to protect surface and ground Water from runoff and drift, the methods of chemical storage and transportation, the training of personnel involved in applications, and the average annual amount of pesticide used. It also should discuss whether the amount of pesticide used will be changed by implementation of the Forest Plan. Potential adverse impacts should be identified and a monitoring plan presented.

Mineral Comment

The FEIS should explain why 400 mineral leases/permits are expected under the Amenities Alternative. where they conflict with the theme, yet only 220 leases/permits are expected under the Preferred Alternative. It should also explain how the number of expected leases is determined.

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION*

1462

Environmental Impact of the Action

LO--Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO--Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy Of the Impact statement

Category 1--Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From: EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment



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UNITED STATES
DEPARTMENT OF THE INTERIOR

OFFICE OF THE SECRETARY
PACIFIC SOUTHWEST REGION
BOX 36098 • 450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102
(415) 556 8200

TAMM
MAY 21 1986

May 19, 1986

ER86/74

Gen B. Larson, Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, CA 95959

Dear Ms. Larson:

The Department of the Interior has reviewed the Draft Environmental Statement (DEIS) and Proposed Land and Resource Management Plan (PLAN) for the Tahoe National Forest and has the following Comments.

River Resources

On page xxv of the Summary, the environmental statement indicates that the former Heritage Conservation and Recreation Service conducted an assessment of the Middle and South Yuba Rivers and found them ineligible for inclusion in the National Wild and Scenic Rivers System. On page 3.85, the statement indicates that this assessment was conducted as part of the Forest planning process by the Forest Service. The latter version is correct. The Nationwide Inventory only identified rivers with potential eligibility for inclusion in the National System along with being worthy of consideration for other protective measures. Thus the Inventory was a data base and did not involve assessments of eligibility. Please correct the erroneous language in the Summary.

The assessments of the Middle and South Yuba Rivers, contained in Appendix E, appear thorough and objective. Although these assessments conclude that neither river is eligible for the National System, we recommend that future Forest management decisions affecting these rivers preserve the natural values of these two river corridors to the greatest extent possible.

The Bureau of Land Management is fully committed to a program of aggressive land acquisition along the North Fork of the American River to support management of this wild River. We believe that the viewshed from Lovers Leap and Eucher Bar trailhead are especially valuable resources which deserve

special management attention to preserve their extraordinary scenic values. It is likely that these two viewpoints will become increasingly popular attractions. We have some specific comments that relate to the management of areas adjacent to the North Fork of the American River.

Management Area 084-Humbug-Sailor

The Alternative A (Preferred) map shows a Management Prescription (Theme) Prescription 13 for the Giant Gap Ridge area and a Prescription 15 for the Giant Gap Gulch area. These two areas are directly across the canyon from the Lovers Leap overlook. The Folsom Resource Area of the Bureau of Land Management has developed an acquisition plan for the North Fork and the number one priority identified in this plan is the Lovers Leap area. Our major concern within the Humbug-Sailor MA is with a management prescription that may eventually degrade the visual quality as viewed from Lovers Leap. We feel the prescription for the Giant Gap Ridge and Gulch areas should be changed from Prescription 13 and Prescription 15 to Prescription 2, to protect those values that enabled the North Fork to become recognized as a Wild River.

The preferred alternative map also shows a Management Prescription of 13 and 15 for the remainder of MA-084. We suggest your staff consider splitting the management Prescription along the top of the canyon above the North Fork American River. A management Prescription 2 would look similar to the management Prescription delineation shown for MA-081 on the Preferred Alternative Map. We believe this would maintain and protect the visual quality, ridgetops and backgrounds for the viewsheds of scenic overlooks and for the recreation users.

Present mining activity and mineral potential are not discussed in the management area description, except when mining causes conflicts. Mining history is occasionally mentioned but not mineral potential.

Mineral Resources

We would like to commend the effort made by the preparers. They have presented the available minerals data, provided analysis of potential impacts, and arrived at defensible multiple use recommendations. Although the documents cover minerals in a brief regard, they are well done. The tone is neutral and informative, and data is to the point and totally functional. There are a few deficiencies, however, and it is important that they be addressed.

1. On page 3.47 of the DEIS, it states that a Mineral Potential Map is available in planning records, 1920.16a.7.d. Since maps showing all other resources accompany the text, it is important that a map of mineral potential be produced to make the text complete and the understanding clear.

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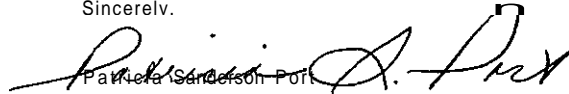
2. Stated in paragraph 1, page 3.48 of the DEIS, "Access for mineral exploration and development is generally unrestricted, subject to the mitigation of impacts on surface resources." The degree to Which these restrictions limit or deter exploration and development should be addressed in the DEIS.

A technique of representing this is shown in the attached section from the Beaverhead National Forest EIS, Montana.

3. Prior to withdrawal of mineral rights along scenic routes on Highways 20, 49, 89, Interstate 80, and the Gold Lake Highway (p. 2.44 DEIS), we would like to see a corresponding economic analysis relating the mineral resource values and associated spinoffs with the perceived values of the scenic highway. Without that it is somewhat difficult to understand what is to be gained an lost by this action.

Thank you for the opportunity to review and comment on these documents.

Sincerely,



Patricia Sanderson-Poff
Regional Environmental Officer

Enclosure. Beaverhead National Forest Example (4 Pp)

ccs: Director, OEPR (w/orig incoming)
Regional Director, NPS
Chief, BM
State Director, BLM
Regional Director, BR
Regional Director, FWS
Regional Director, BIA

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4) Visual quality will be decreased, although screening can lessen the visual impact of developments. Although environmental effects can be minimized through existing regulations, the long-term effect will be an overall decline in the quality of the environment

5) Activities will cause an undesirable increase in human/wildlife encounters and increased disturbance of wildlife habitat. Seasonal restrictions on activities, screening of operations and measures to minimize noise and emissions, will help mitigate these impacts

6) Air quality may be reduced during activities, but can be mitigated through dust abatement and emissions control measures.

7) Continued activity will result in increased pressures on cultural and historical values that exist. An increased number of mitigation measures will be required to protect these properties. More old mining properties that have historic significance will be reopened. Although mitigation procedures will be followed, these areas will no longer be preserved in the same manner they are today.

8) Even though a relatively small acreage will be involved Forest-wide, the number of severely disturbed acres that can no longer be reclaimed to a condition where the imprint of man's activity is not noticeable, will increase. Well designed operations and thorough reclamation will minimize this acreage.

9) Development and production can change the social and economic structure of local communities and can result in a population influx that will put a strain on local resources. These social and economic impacts from (temporary) increases in population will be long-term effects, but are reversible. Mitigation through community planning is possible

Activities associated with exploration, development and production of mineral resources will assist the nation's effort lessen the existing shortage of critical minerals, decrease dependence on foreign mineral imports from politically unstable countries and reduce the balance of payments deficit

Withdrawals from mineral entry and significant access restrictions have a long-term effect on minerals discovery, development and production. Mines may require a lead time of 20 years or more from the beginning of the exploration project to the delineation of an economic mineral deposit. Several more years may be required for that deposit to be brought into production. If discoveries are impeded for a period of time through restricted access or withdrawal, a relaxation of restrictions will not have an immediate effect on production. There will be a significant delay before a production increase from new discoveries is realized. Withdrawals and significant access restrictions will result in some mineral deposits not being found or not being developed. This will increase existing and future minerals shortages, increase dependence on foreign imports and increase the nation's balance of payments deficit. This effect will be the greatest where there is significant mineral potential or high/very high geologic favorability. The amount of area exhibiting restrictions to mineral

Category A Withdrawn or proposed for withdrawal from mineral entry
1 Wilderness areas
2 Wild and scenic rivers
3 Sites for facilities
4 Historic and cultural sites
5 Developed recreation sites

Category B Statutes or executive orders require specific protection or mitigation measures.
1. Proposed wilderness areas
2. Congressionally mandated wilderness study areas
3 RARE 1) Further Planning areas
4 T&E Species
5 Roadless (Type 1) dispersed recreation areas.
6 Culturally significant areas

Category C Special conditions exist on lands which require special lease stipulations or plan of operation conditions
1 Big game winter range
2 Elk calving area
3 Riparian area

Category D Standard lease stipulations and plan of operation conditions apply
1 Timber production areas
2. Existing mineral processing areas

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Table II - 11 cont

Alternative F									
Access Category	Energy				Access Category	Non-Energy			
	Low	Mod	High	Very High		Low	Mod	High	Very High
A	112,520	326,993	40,857	125,976	A	0	433,889	98,997	73,460
B	5,277	112,218	29,458	12,822	B	0	46,025	23,517	90,233
C	38,575	560,449	151,100	36,396	C	0	370,867	180,352	235,431
D	16,664	405,538	123,090	49,458	D	0	291,919	122,166	180,665

Alternative G									
Access Category	Energy				Access Category	Non-Energy			
	Low	Mod	High	Very High		Low	Mod	High	Very High
A	101,081	85,511	40,857	0	A	0	225,309	2,140	0
B	3,004	139,404	0	0	B	0	18,517	12,730	111,161
C	33,572	459,851	188,380	97,431	C	0	446,052	178,442	154,740
D	35,379	697,537	147,083	118,461	D	0	454,037	231,720	312,673

Alternative H									
Access Category	Energy				Access Category	Non-Energy			
	Low	Mod	High	Very High		Low	Mod	High	Very High
A	101,081	152,261	12,907	0	A	0	126,769	68,868	70,612
B	95	185,669	13,068	0	B	0	42,368	63,272	93,192
C	27,092	466,101	226,368	132,792	C	0	503,529	197,358	151,466
D	44,768	566,754	135,220	83,345	D	0	397,530	154,971	277,586

Alternative I									
Access Category	Energy				Access Category	Non-Energy			
	Low	Mod	High	Very High		Low	Mod	High	Very High
A	128,405	809,421	330,757	168,615	A	0	848,419	329,759	259,020
B	1,753	66,933	636	943	B	0	6,134	1,462	62,664
C	9,885	116,556	3,679	9,090	C	0	80,952	11,709	46,549
D	32,996	388,998	41,248	37,609	D	0	207,193	82,102	211,556

Alternative W									
Access Category	Energy				Access Category	Non-Energy			
	Low	Mod	High	Very High		Low	Mod	High	Very High
A	118,629	355,544	32,039	0	A	0	304,971	106,567	94,674
B	1,561	91,450	1,966	3,225	B	0	21,094	8,748	68,360
C	18,655	506,842	170,996	119,536	C	0	437,432	176,320	222,217
D	14,191	428,072	171,359	93,496	D	0	379,203	131,197	194,518

Table II-11

Mineral Evaluation Report

Alternative A									
Access Category	Energy				Access Category	Non-Energy			
	Low	Mod	High	Very High		Low	Mod	High	Very High
A	101,081	230,311	0	0	A	0	193,812	66,868	70,612
B	12,765	172,068	16,848	2,395	B	0	42,167	6,927	154,782
C	972	104,542	1,858	722	C	0	50,639	10,238	47,217
D	58,218	05,119	357,782	213,140	D	0	856,082	340,999	307,178

Alternative B									
Access Category	Energy				Access Category	Non-Energy			
	Low	Mod	High	Very High		Low	Mod	High	Very High
A	101,081	76,532	0	0	A	0	177,613	0	0
B	2,471	116,094	19,317	3,369	B	0	35,877	10,914	94,460
C	29,666	467,929	220,241	115,770	C	0	474,729	191,967	166,910
D	39,818	721,428	136,762	97,043	D	0	455,906	221,941	317,204

Alternative C									
Access Category	Energy				Access Category	Non-Energy			
	Low	Mod	High	Very High		Low	Mod	High	Very High
A	128,066	481,154	329,998	165,242	A	0	704,853	267,623	131,987
B	3,835	105,873	223	110,693	B	0	27,091	7,812	75,767
C	18,889	169,777	8,569	11,263	C	0	395,467	199,974	278,473
D	30,246	625,104	37,500	38,993	D	0	395,467	199,974	278,473

Alternative D									
Access Category	Energy				Access Category	Non-Energy			
	Low	Mod	High	Very High		Low	Mod	High	Very High
A	127,970	402,124	201,920	125,976	A	0	564,337	193,234	100,399
B	4,072	207,232	44,843	14,872	B	0	180,038	89,576	141,037
C	22,309	302,479	50,680	24,115	C	0	305,026	114,207	199,606
D	18,685	470,073	78,877	51,294	D	0	305,026	114,207	199,606

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
Sacramento Area Office
2800 Cottage Way
Sacramento, California 95825

IN REPLY REFER TO
Natural Resources

MAR 24 1986

Mr. Geri B. Larson, Forest Supervisor
Tahoe National Park
Highway 49 & Coyote Street
Nevada City, CA 95959

Dear Mr. Larson:

We have reviewed your letter 1920, dated January 6, 1986 and found no
Indian lands under the jurisdiction of this office.

Sincerely,

Area Environmental Specialist

① [Handwritten initials]
[Handwritten signature]
Path LWP
H. Noel

TAHDE N.F.
MAR 25 1986

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CALIFORNIA STATE OFFICE
2800 Cottage Way
Sacramento, California 95825

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CA-930.12

MAY 28 1986

17-2-000534-0

Zane G. Smith, Jr.
Regional Forester
U.S. Forest Service
630 Sansome Street
San Francisco, CA 94111

Dear Mr. Smith:

We have completed our initial review of the Tahoe draft environmental statement and proposed land and resource management plan. The following comments have been forwarded to the Regional Environmental Officer for inclusion in the Department of the Interior response.

We would like to commend the effort made by the preparers. They have presented the available minerals data, provided analysis of potential impacts, and arrived at defensible multiple use recommendations. Those areas having high mineral potential remain open to exploration and areas where mineral development is not compatible have been adequately documented to demonstrate why they should be closed to mineral entry.

As you know, the Bureau is fully committed to a program of aggressive land acquisition along the North Fork of the American to support management of this Wild River. We believe that the view shed from Lovers Leap and Eucher Bar trailhead are especially valuable resources which deserve special management attention to preserve their extraordinary scenic values. It is likely that these two viewpoints will become increasingly popular attractions. The Bureau's specific comments relate to the management of areas adjacent to the North Fork of the American River.

specific comments

1. Management Area 084-Humbug-Sailor.

The alternative A (Preferred) map shows a Management Prescription (Theme) 13 for the Giant Gap Ridge area and a Prescription 15 for the Giant Gap Gulch area. These areas are directly across the canyon from the Lovers Leap overlook. The Folsom Resource Area has developed an acquisition plan for the North Fork and the number one priority identified in this plan is the Lover Leap area. Our major

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IN REPLY REFER TO:

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11589

- concern with the Humbug-Sailor MA is with a management prescription that may eventually degrade the visual quality as viewed from Lover Leap. We feel the prescription for the Giant Gap Ridge and Gulch areas should be changed from Prescription 13 and Prescription 15 to Prescription 2, to protect those values that enabled the North Fork to become a Wild River.
2. The preferred alternative map also shows a Management Prescription of 13 and 15 for the remainder of MA-084. We suggest your staff consider splitting the management Prescription along the top of the canyon above the North Fork American River. A management Prescription 2 would look similar to the management Prescription delineation shown for MA-081 on the Referred Alternative Map. We believe this would maintain and protect the visual quality middle-grounds and backgrounds for the view sheds of scenic overlooks and for the recreation users.
 3. Resent mining activity and mineral potential is not discussed in the management area description, except when mining causes conflicts. Mining history is occasionally mentioned but not mineral potential.

We feel there should have been a map included with the resource and support element maps, showing presently and proposed for withdrawal from mining laws. Another map showing mineral potential on the TK would have been informative.

Sincerely,

Ed Hastey
Ed Hastey
State Director

cc:
DM, Bakersfield



United States Department of the Interior

FISH AND WILDLIFE SERVICE
SACRAMENTO ENDANGERED SPECIES OFFICE
2800 Cottage Way, Room E-1823
Sacramento, California 95825

MAY 30 1986

Ms. Geri B. Larson
Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, California 95959

Subject Proposed Land and Resource Management Plan and Draft
Environmental Impact Statement for the Tahoe National
Forest (Case No. 1-1-86-1-206)

Dear Ms. Larson:

This letter contains our comments on selected aspects of the Tahoe
Forest Plan that relate to threatened and endangered species. The
comments focus on those elements of the plan that are most likely,
our view, to conflict with the survival and recovery of candidate,
proposed, and listed species. Other divisions of our agency may submit
Comments separately concerning general fish and wildlife impacts.

We have not critically reviewed the methodologies that have been used
other technical areas of the plan [recreation, timber, range, etc.] to
ascertain whether they are consistent with your assumptions and
projections for threatened and endangered species. However, we have
reviewed the models and data bases that have been used for fish and
wildlife and we have serious reservations about whether they are
adequate to provide valid projections on probable impacts to fish and
wildlife resources in general and threatened and endangered species in
particular.

Generally, we believe that the resolution of issues involving listed
species is best achieved through the normal Section 7 consultation
Process on a project-by-project basis when more specific information is
available concerning potential project impacts. However, in those cases
where we believe the recommended management direction is not consistent
with your stated general commitment to protect and enhance habitat for
threatened and endangered species, we are submitting specific comments
and recommendations now in an effort to prevent future Section 7
conflicts.

The recent discovery of nesting bald eagles (Haliaeetus leucocephalus)
is understandably not addressed in the plan. However, the final plan
should reflect the guidance provided in the draft Pacific States Bald
Eagle Recovery Plan. This recovery plan recommends management for three
nesting territories on the Tahoe National Forest -- at Boca, Stampede,
and Jacksons Meadows Reservoirs -- to meet the recovery goal. The
planned recreation for these reservoirs may be in conflict with this
goal.

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JUN 24 1986

Table with columns: No. Rec'd, X-Act, Date & Initials. Rows include FS, DFS, AD, TBR, REC, RES, ENG, LMP, FMO, PIO, PERS, ACCTG, PROC.

Handwritten notes and signatures: 'Jae', 'Drc', 'Get copy to...', 'Laudens...', 'Camp'

One area of the plan where we anticipate a major conflict with habitat needs is a listed species concern: the upper Independence Lake Management Area 03 (also a Management Area 04 site). These two management areas, which contain the upper Independence Lake support a remnant population of the threatened Lahontan cutthroat trout (Salmo clarki henshawi). The Independence Lake population of Lahontan cutthroat trout is the only known remnant population of this fish in the Truckee River basin and represents one of only two surviving lacustrine races. Independence Creek provides the only spawning habitat available for this lake population. The importance of the Independence Lake population in the overall recovery program for this fish is recognized in both the Lahontan Cutthroat Trout Recovery Plan (USFWS 1985) and the California Department of Fish and Game's Lahontan Cutthroat Trout Management Plan (COFG 1985).

The status of the Independence Lake population is precarious, at best. Run sizes have declined drastically from historical levels, with recent spawning runs averaging only about 60 adult fish (Gerstung 1983). In the late 1800's, Independence Lake supported a commercial fishery for Lahontan cutthroat trout and spawning runs of 2,000 or more fish ascended Independence Creek in spite of this fishing pressure (Shelby 1894, 1904).

The preferred alternative authorizes uses in the Lola and Castle management areas that are likely, in our opinion, to cause the eventual extirpation of this population of Lahontan cutthroat trout. The management direction for these two units would permit private recreation management (winter sports development), road development, motorized recreation, regulated timber management (including clearcutting and other types of timber harvest), and livestock grazing (reopening the White Rock Allotment for bath sheep and cattle).

The Independence Lake population of Lahontan cutthroat trout would be adversely affected by these activities because (1) improved road access to Independence Lake and upper Independence Creek would increase the unauthorized take of spawning adults from Independence Creek, (2) recreational development of the area around Independence Lake would increase visitor use and angling pressure in the lake, thereby increasing incidental mortality to Lahontan cutthroat trout from this source, (3) new roads and increased traffic would increase the likelihood of unauthorized introductions of other fish species into the watershed, and (4) livestock grazing, road construction, recreational development, timber harvest activities, and off-road vehicle use would degrade stream habitat quality and lake water quality.

Lahontan cutthroat are extremely vulnerable to displacement by introduced fishes and depletion by angling. One of the principal causes for the decline in the distribution and abundance of this fish has been the widespread introduction of other trout species into Lahontan cutthroat trout waters. When other trout species, particularly closely related species such as the rainbow trout, gain a foothold in native Lahontan Cutthroat trout habitats, Lahontan Cutthroat trout are nearly always displaced. Lahontan cutthroat trout may also be adversely affected by bait bucket introductions of minnows, sunfish, bullheads,

a other native fish s. The danger of unauthorized "coffee can" transplants of nonnative fish is greatest in areas that receive heavy visitor use and have good road access. The development of authorized alternatives would substantially increase visitor use at Independence Lake and also make it easier for someone to transport live fish by vehicle into reaches of upper Independence Creek that are now relatively isolated and inaccessible.

Lahontan cutthroat trout are highly vulnerable to angling, particularly when spawning in small tributaries such as Independence Creek. Their large size, and the ease with which they can be caught from small tributaries would make them tempting targets for recreationists who would visit the area because of improved road access. Angling by such summer visitors is a significant potential problem because Lahontan cutthroat trout spawn in July and August during the peak summer use period. The remoteness of upper Independence Creek from other California Department of Fish and Game patrol areas would make effective law enforcement extremely difficult. Any additional loss of spawning adults to poachers from this already depleted population would severely reduce the survival prospects of Lahontan cutthroat trout in Independence Lake. Similarly, any degradation of habitat caused by road building, livestock grazing, timber harvest activities, or intense recreational development would be significant, and perhaps fatal, obstacles to the survival and recovery of this population.

In view of the depleted status of Lahontan cutthroat trout in Independence Lake, and the severe detrimental impact that the preferred alternative would be likely to have on this species, we recommend that another alternative be developed that does not authorize increased levels of motorized use, recreational development, livestock grazing, timber harvest, or road construction in those components of the Lola and Castle Management Units that contain habitat for Lahontan cutthroat trout. The upper Independence Creek watershed (Sec 8, T18N, R15E) is ideally suited for designation as a Research Natural Area or Special Interest Area. Consultation, pursuant to Section 7 of the Endangered Species Act, should be initiated with our office on any activity authorized in the plan that would be likely to have an adverse effect on the Lahontan cutthroat trout.

In addition to our concern about the severe adverse impacts that implementation of the preferred alternative would be likely to have on this listed species, we are also concerned about potential adverse effects to candidate species. Several candidate mammals occur in the Tahoe National Forest, including the Sierra Nevada fox (Vulpes vulpes necator), Sierra Nevada snowshoe hare (Lepus americanus tahoenensis), and Spotted bat (Euderma maculatum). Candidate species are not afforded legal protection under the Endangered Species Act.

Little information is presented in the proposed plan or draft EIS regarding the habitat requirements of these candidate mammals, and little direction is given in the plan concerning how the habitats for these mammals would be managed to insure their survival. In discussing the data base for these candidate mammals and other non-indicator vertebrate species, the draft EIS acknowledges that "... practically

nothing is known about existing populations or future trends." The draft EIS further notes, "The information that does exist rarely reflects the true status of the wildlife resource and is certainly inadequate to assess the current supply of all vertebrate species."

Effective management of these candidate species is now precluded by the lack of information that is available on the life history and distribution of these animals. Such information is essential for developing management programs for maintaining and enhancing the population of these species in the Tahoe National Forest. However, little specific opportunity for acquiring this data or for monitoring candidate or even listed species appears to be afforded in the various management plan alternatives.

For example, the funding allocated in the plan for monitoring such species is inadequate to provide implementation of a trend analysis program. The rarity of most candidate species dictates that extensive, prolonged surveys be undertaken that are, by their very nature, expensive. Unreliable data are acquired by less intensive studies. We strongly advocate that significantly higher levels of funding for monitoring of sensitive plant and wildlife resources be allocated in this management plan. A high priority should be assigned to obtaining such funding for acquisition of initial baseline data and for sustained long-term resource monitoring and protection. Contrary to implied statements in the plan, our office does not foresee any opportunity to provide funds towards this end.

Given the acknowledged deficiency of base line data with respect to existing population levels and population trends for nearly all of the vertebrate animals that occur in the Tahoe National Forest, we believe the projections in the plan with respect to probable impacts on fish and wildlife are highly suspect. The projections in the plan are based entirely on estimates developed from using untested Habitat Capability Models. In Appendix G.2, the Forest Service acknowledges that these models have never been validated: "At the present time, we do not consider the information sufficiently refined to permit a 'site index' assessment to be made. This is because much of the information is based on professional judgement, rather than empirical data, and because the predictive capabilities of the models have not been experimentally verified." (emphasis added). Until adequate baseline data have been generated and the models used for evaluating fish and wildlife impacts have been validated, there is no scientific basis to support the conclusion that "All alternatives would maintain viable populations of the wildlife indicator species and would fulfill Forest Service responsibilities to protect and enhance habitat for the threatened and endangered species."

Before the Forest Service commits itself to a plan that has enormous potential to drastically alter habitat conditions for several candidate and listed threatened and endangered species, we recommend that a commitment first be made to obtaining the needed baseline data and validating the models that are used to evaluate fish and wildlife impacts. In situations where there is already good documentation to

show that a listed or candidate species is currently in a declining or depleted status. such as for the Independence take population of Lahontan cutthroat trout, land uses that would exacerbate the situation should be avoided until **recovery** is well underway.

Thank you for the **opportunity** to review these **documents**. We would appreciate receiving notice of future activities that relate to the revision or implementation of the **proposed** plan. Please contact Ed **Lorentzen** or Ted **Rado** at FTS 460-4856 (916/978-4866) if you have any questions regarding our **comments**.

Sincerely,



Gail C. Kobetich
Project Leader

Attachment

cc,
Chief, Endangered Species, Portland, OR (AFA-SE; Attn: Ralph Swanson)
~~Pacific-Southwest Regional Office, U.S. Forest Service, 630 Sansome
Street, San Francisco, CA 94111 (Attn: Dale Avant)~~
Project Leader, Great Basin Complex, 4600 Kietrke Lane, Suite C,
Reno, NV 89502
Field Supervisor, Ecological Services, Sacramento, CA (ES-S)
Threatened Trout Coordinator, California Department of Fish and Game,
1701 Nimbus Road, Suite C, Rancho Cordova, CA (Attn: Eric Gerstung)

REFERENCES

California Department of Fish and Game. 1985. Fishery management plan for Lahontan cutthroat trout (*Salmo clarki henshawi*) in California and western Nevada waters. Inland Fisheries Administrative Report No. 85. 95 pp.

Gerstung, E. R. 1983. The status and Management of the Lahontan cutthroat trout (*Salmo clarki henshawi* Snyder). Unpubl. Admin. Rpt. Inland Fisheries Branch, Calif. Dept. Fish and Game, Sacramento. 42 pp.

Shebley, W. H. 1894. Thirteenth biennial report of the State Board of Fish Commissioners of the State of California for the years 1893-1894.

_____. 1904. Eighteenth biennial report of the State Board of Fish Commissioners of the State of California for the Years 1903-1904.

U.S. Fish and Wildlife Service. 1985. Recovery plan for the Lahontan cutthroat trout. Agency review draft. 49 pp.

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REPLY TO
 ROOM 3082
 STATE CAPITOL
 SACRAMENTO CALIFORNIA
 95814
 (916) 445-5788
 720 SUNRISE AVENUE
 SUITE 110-9
 ROSEVILLE CALIFORNIA
 95678
 (916) 783-0232



COMMITTEES-
 RULES
 BUSINESS AND PROFESSIONS
 VICE CHAIRMAN
 AGRICULTURE AND WATER RESOURCES
 INSURANCE, CLAIMS AND CORPORATIONS
 JUDICIARY
 SELECT COMMITTEE ON SMALL
 BUSINESS ENTERPRISES
 JOINT COMMITTEE FOR THE
 REVISION OF THE
 PENAL CODE

T. H. ...
 APR 23 1986

Senate
California Legislature

JOHN T DOOLITTLE
 First District

Supervisor Geri B. Larsen
 Tahoe National Forest

April 21, 1986
 Page 2

April 21, 1986

Supervisor Geri B. Larsen
 Tahoe National Forest
 Highway 49 and coyote Street
 Nevada City, CA 95959

Dear Supervisor Larsen:

I take this opportunity to express to the United States Forest Service my **views** on the proposed management plan for the Tahoe National Forest.

As the state Senator representing the Tahoe National Forest, I am deeply concerned with this management plan. I am **sure** that you are aware how many lives are directly and indirectly affected by the timber industry in this region. The specific sub-proposals involving the prohibition of herbicides, and the exemption of acreage dedicated to the spotted owl does nothing but curtail timber production **even more**, close additional mills, and terminate needed jobs -- from the supermarket clerk to the elementary school teacher. The forest receipts which keep **our** county highways and schools open would be drastically slashed. This is just **one more unreasonable concession to those** parties who want to see the timber industry shut down. They care little about the welfare of the people who live and work in these areas.

Because of the threat to our timber revenues, I have joined with state Assemblyman Wally Herger of Rio Oso to introduce Senate Joint Resolution 49, which would petition the federal government to oppose any legislative or administrative changes which would reduce forest reserve funds legally due counties that contain timber-producing forest lands,

In addition to SJR 49, my staff is actively working with the County Supervisors Association of California in its efforts to stop the threatened outback in timber revenues by the federal government.

I commend the U.S. Forest Service for bringing these issues to the forefront for public discussion prior to making a final decision on the proposed management plans and thank you for your consideration.

Sincerely,

JOHN T. DOOLITTLE

JTD:rcw

My name is Rick Stats and I'm representing Senator John Doolittle of the California First Senate District. I take this opportunity to express to the United States Forest Service my views on the proposed management plan for the Tahoe National Forest. As the State Senator representing the Tahoe National Forest, I am deeply concerned with this management plan. I am sure that you are aware how many lives are directly and indirectly affected by the timber industry in this region. The specific sub-proposals involving the prohibition of herbicides and

the exemption of acreage dedicated to the spotted owl does nothing but curtail timber production even more, close additional mills, and terminate needed jobs from the supermarket clerk to the elementary school teacher. The forests receipts which keep our county highways and schools open would be drastically slashed. This is just one more unreasonable concession to those parties who want to see the timber industry shut down. They care little about the welfare of the people who live and work in these areas. Because of the threat to our timber revenues, I've joined with State Assemblyman Wally Herger of Rio Oso to introduce Senate Joint Resolution 49, which would petition the federal government to oppose any legislative or administrative changes which would reduce forest reserve funds legally due counties that contain timber-producing forest lands. In addition to SJR 49 my staff is actively working with the County Supervisors Association of California in its efforts to stop the threatened cutback in timber revenues by the federal government.

I commend the U.S. Forest Service for bringing these issues to the forefront for public discussion prior to making a Final decision on the proposed management plans, and thank you for your consideration. Sincerely, John T. Doolittle. That's all I have.

DISTRICT OFFICE
FORT SUTTER BUILDING
2708 K STREET SUITE 5
SACRAMENTO CALIFORNIA 95816
443 1183

CAPITOL OFFICE
STATE CAPITOL
SACRAMENTO CALIFORNIA 95814
445 2484

4280

Assembly
California Legislature

IL FOREST
MAY 30 1986

LLOYD G CONNELLY
MEMBER OF THE LEGISLATURE
SIXTH ASSEMBLY DISTRICT

COMMITTEES
WAYS AND MEANS
JUDICIARY
ENVIRONMENTAL SAFETY
AND TOXIC MATERIALS
AGING & LONG TERM CARE

SUBCOMMITTEES
CHAIR ADMINISTRATION OF
JUSTICE
STATE ADMINISTRATION
HEALTH & WELFARE

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May 29, 1986

Page 2

May 29, 1986

Geri B Larson, Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, California 95959

Dear Ms. Larson.

I am writing to express my strong concerns relating to the United States Forest Service Draft Management Plan for the Tahoe National Forest.

As you know, the Tahoe Forest is one of the most unique and resource-rich forests in this country. Its value as a public natural resource is underscored by its tremendous popularity as a recreational area for thousands of visitors every year. We Californians--as well as people from throughout the United States and the world--recognize Tahoe National Forest as one of our most cherished natural areas worthy of our most creative, resourceful and thoughtful measures of stewardship.

The proposed management plan drafted by the Forest Service would contravene this public trust by dramatically diminishing the recreational value of Tahoe National Forest and threatening virtual destruction of the few remaining regions of old-growth natural forest in the Northern Sierra Nevada. Clearly, there is a broad range of planning issues presented by the Forest Service Plan which warrant critical assessment and revision. Among those issues which are of particular concern include the proposed wholesale incorporation of clearcutting as the primary method of timber cutting, the near elimination of roadless areas, the high levels for allowable herbicide usage, and the overall deleterious impact that these and other production-oriented components of the plan will have on the long-term quality and balance of the Tahoe National Forest.

I urge reconsideration of this ill-conceived management draft in favor of the Citizens' Alternative Management Plan. It is my hope that, by incorporating the recommendations set forth in this alternative, a reasonable and sensible framework can be established to ensure that the irreplaceable forest resource we have been privileged to enjoy during our lifetimes will survive into the next century. This goal cannot be achieved--and with certainty will be defeated--if the current version of the Forest Service Management Plan is adopted.

Sincerely,

LLOYD G. CONNELLY
Member of the Assembly

LGC:as

1264

SACRAMENTO OFFICE
State Capitol
Sacramento, CA 95814
(916) 445-7708

DISTRICT OFFICE
1521 Buhr Home Road
State C
Yuba City, CA 95991
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DISTRICT OFFICE
2505 The Esplanade
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Chico, CA 95926
(916) 891-1671

Assembly California Legislature

WALLY HERGER
ASSEMBLYMAN THIRD DISTRICT

COMMITTEES
Agriculture
Health
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Ways and Means

Select Committees
Festivals, Problems in
Timber & Related Industries
Victim Restitution
The Auburn Class

Joint Committee on Fairs
Allocation and Classification
Member Rural Caucus

TAHOE NATIONAL FOREST

VICE CHAIRMAN COMMITTEE ON AGRICULTURE

APR 16 1986

April 4, 1986

RECEIVED

Mrs. Geri Larson, Forest Supervisor
Tahoe National Forest
Highway 49 & Coyote Street
Nevada City, CA. 95959

Re: Tahoe National Forest
Draft Management Plan

Dear Mrs. Larson:

This office represents the Third Assembly District and this letter is being written on behalf of many constituents who have contacted me with regard to the proposed Draft Management Plan.

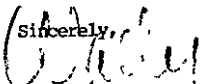
I would like to urge your consideration in addressing both the social and economic issues of the proposed plan. My district is very rural in nature and many counties rely upon the forestlands as a solid tax base.

The timber industry provides the means whereby people can continue to support themselves and their communities on an ongoing basis. The timber industry has also show a great willingness to provide long range recreational benefits.

I believe we can all work together and use reasonable judgement in determining the future of our forestland. I would urge your support in behalf of my district to maintain a balance of interests and to meet the needs of all concerned without the expense of the many communities who may greatly suffer if we curtail the logging activity in the Tahoe National Forest.

should you have any questions or comments, please feel free to contact me.

Thank you for your consideration.

Sincerely,

WALLY HERGER
Assemblyman, Third District

WH:fpv

California Legislature

June 16, 1986

Max Peterson, Chief
Forest Service
U.S. Department of Agriculture
P.O. Box 2417
Washington, O.C. 20013

Dear Mr. Peterson.

We write to advise you of our deep concerns regarding the Forest Service's new management plans for national forests in California and specifically in regard to the Tahoe National Forest Plan.

Clearly, the Forest Service is under an obligation in accordance with the National Forest Management Act of 1976 to develop plans that will serve **multipurposes**. Some have interpreted this to mean that timber must be harvested at any cost. Specifically, we draw your attention to the preferred alternative in the Tahoe Forest Plan which proposes to allow clearcutting within 400 feet of the upper American River

As you are no doubt aware, the American watershed provides drinking water to Sacramento; parts of the watershed are of such importance that they have been included in the National Wild and Scenic Rivers Act. The downstream watershed supports millions of recreation days and an important wild trout fishery. The proposal to clearcut below the rim of this watershed, and others like the Yuba River drainage, will cause significant economic impacts due to increased erosion, damage to fishery resources, significant flood control costs and potential damage to a major drinking water supply.

In California, tourism is a \$31 billion a year industry, surpassed only by defense spending. The Tahoe National Forest is a one of the ten most heavily used recreation forests in the entire nation. We wish to caution you in adopting your management plans to ensure that this valuable resource is managed in a such a way as to not only sustain timber harvests in the future, but also protect the watersheds for erosion control, flood control, fisheries and water supplies, as well.

The Forest Service is mandated by the Fish and Wildlife Coordination Act to manage their lands so as to not degrade the resources protected under the federal Wild and Scenic Rivers Act. We urge you to carefully consider the values that would be impacted by proceeding with clearcutting plans along the slopes of the American and Yuba River drainages.

Thank you.

Byron D. Sher
BYRON D. SHER, Chairman
Natural Resources Committee

Sam Farr
SAM FARR, Chairman
Economic Development
& New Technologies Committee

STATE CAPITOL - SACRAMENTO, CALIFORNIA 95814

Handwritten note: Please send to Gen. Jensen

REGIONAL FORESTER RECEIVED	
JUL 07 '86	
RF	Sec <i>[Signature]</i>
EA	Sec _____
STAR	Sec <i>[Signature]</i>

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(L.S.L.)

7/14/86

Jack O'Connell
Jack O'Connell

Richard Katz
Richard Katz

Bruce Bronzan
Bruce Bronzan

Thomas Hannigan
Thomas Hannigan

Robert Campbell
Robert Campbell

Peter Chacon
Peter Chacon

Lucy Killea
Lucy Killea

20,498

Rusty Arzias
Rusty Arzias

Burt Margolin
Burt Margolin

Richard E. Floyd
Richard E. Floyd

Phil Isenberg
Phil Isenberg

Art Agnos
Art Agnos

Michael Roos
Michael Roos

Lloyd Connelly
Lloyd Connelly

bcc: Zane Smith ✓

JUN 11 1986

Larson

*C. Corbett
cc Larson
6-11-86
en*



State of California
DEPARTMENT OF JUSTICE

350 McALLISTER STREET ROOM 6000
SAN FRANCISCO 94102
(415) 557 2544

20,451

JOHN K VAN DE KAMP
Attorney General

Gerl B. Larson, Forest Supervisor
Page 2
June 6, 1986

(415) 557-4111

June 6, 1986

Gerl B. Larson, Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, CA 95959

20,451

Dear Supervisor Larson:

Re Proposed Tahoe National Forest Plan and Draft
Environmental Impact Statement; Comments

This letter contains the comments of the Attorney General of the State of California regarding the Proposed Tahoe National Forest Plan (Plan) and Draft Environmental Impact Statement (DEIS)

The Attorney General submits these comments pursuant to his constitutional, common law and statutory authority to represent the public interest, and in particular to protect natural resources of the State from pollution, impairment, or destruction. See Cal Const. art 13; Cal. Gov't Code §§ 12511, 12600-12; D'Amico v. Board of Medical Examiners (1974) 11 Cal.3d 1, 14-15.

The Plan and DEIS have generated a substantial amount of controversy and a large number of comments. Therefore, rather than repeat many of the specific points of other commentators, this letter focuses on major concepts and concerns and is not an exhaustive discussion of all issues. The Attorney General believes strongly that the Plan and DEIS insufficiently consider the devastating effects of clear-cutting, increased logging, and road access on all Coexistent uses of the forest, including fish and wildlife, soil and watershed, outdoor recreation, sustained yield of range and timber, and wilderness.

COMMENTS

General

Congress has long recognized the unquantifiable value of our limited forest lands and long-ago designated the United States Forest Service as the protector of the national forests. See

Organic Administration Act. 16 U.S.C. §§ 473 et seq. Protection of the national forests depends on coordination of multiple use and sustained yield opportunities that creates "harmonious and coordinated management of various resources, .. not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output." Multiple Use-Sustained Yield Act, 16 U.S.C. §§ 528-31; see National Forest Management Act, (NFMA) 16 U.S.C. §§ 1600 et seq. The emphasis of the Tahoe Forest Plan on clear-cutting and increased timber yield threatens the multiple use concept.

Neither the Plan nor the DEIS adequately addresses possible adverse effects to the wilderness, to plant and animal diversity, to streamside management, to soil erosion, and of increased use of herbicides, among others. The "environmental consequences" Section of the DEIS covers 126 pages in which the effects of ten separate forest plan alternatives are considered— for an average of 12.6 pages per plan. Each plan represents a possible management scenario for the entire Tahoe National Forest, including analyses of recreation, wilderness, fish and wildlife, forage, riparian areas, timber, water, minerals, human resources, land use, soils, facilities, protection, energy conservation, air quality, socio-economic factors and geology. Not surprisingly, the DEIS, in its 126 pages per plan lacks nuance, detail, and specificity in its discussion of the environmental consequences of each of the far-reaching plans. The highly generalized gloss leaves the reader with numerous questions and a feeling of uneasiness that the report has not considered all the alternatives, and that the consequences have received little more than superficial review ^{1/}

The EIS should provide a basis for evaluating the proposed plan's benefits and environmental costs and for comparing the plan with the alternatives. Natural Resources Defense Council, Inc v. Morton (D.C. Cir. 1972) 458 F.2d 827, 833. Further, the EIS should serve the crucial purpose of providing

1. For example, the entire discussion of environmental consequences of the preferred plan with respect to soils states: "[Alternative A has] a slightly higher potential for reducing soil productivity than alternative B [It has an] 8 percent increase [] in regeneration harvest acres plus type conversion." DEIS 4.74.

6/11
cc: Corbett
Larson

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Gerl B. Larson, Forest Supervisor
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the public with information on the environmental effects of proposed plans, thereby encouraging informed public participation in agency decision-making. Trout Unlimited v. Morton (9th Cir. 1974) 509 F.2d 1276, 1282. The DEIS for the Tahoe Plan fails to meet these requirements.

Multiple Uses

The concepts of multiple use and sustained yield ensure simultaneous protection of fish and wildlife, range, watershed, soils, timber, wilderness, and outdoor recreation. NFMA regulations require consideration of the relative value of all renewable resources, based on criteria other than simply dollar return or timber output. See 36 C.F.R. §§ 219.1 and 219.27(b)(3). The multiple use notion necessitates review of alternative plans reflecting a spectrum of uses.

The DEIS presents ten alternatives. Unfortunately, the nine alternatives to the "preferred" alternative (which forms the basis of the Proposed Plan) are caricatures of reasonable multiple use plans, creating a polarization and allowing the easy dismissal of all but the preferred alternative. For example, the timber alternative emphasizes high timber commodity outputs to the detriment of other uses: the amenities alternative does the same with primitive wilderness uses, just as the motorized recreation alternative emphasizes that particular interest. The DEIS describes the "preferred" alternative as emphasizing a broad range of benefits.

Virtually by definition, those plans that emphasize a particular benefit at the expense of others must fall in a multi-use scheme. But the alternatives presented leave a multitude of more reasonable alternatives unconsidered. Numerous plans, each with significant modifications, could be designed to emphasize a broad range of benefits. The most obvious example would call for an identical plan to the one denominated preferred, with the sole change of precluding clear-cutting. Timber yields would remain the same but environmental consequences might be substantially altered. Other modifications giving rise to realistic alternatives could include the use of more land as primitive or semi-primitive preserve or the protection of a larger corridor of lands abutting streams. These alternatives emphasize a broad benefit range, create a reasonable spectrum of choice, and provide a realistic set of alternatives for public comment and agency decision-making. Without a more reasonable spectrum of choice, the EIS process falls to present sufficient information.

The DEIS and the Plan also skew the multiple use formula in favor of economic uses. The Plan defines the value of fish and wildlife resources in terms of "recreation use days." Plan III.17, which are defined entirely as a function of human demand

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There can be little dispute that the protection of wildlife and fish has a value beyond that determined by the interest of human beings in hunting, fishing, and viewing. See e.g., Endangered Species Act, 16 U.S.C. § 1531-43. Further, human demand for "recreation use" will always remain artificially low in such a formula because part of its "value" is based on the ability to enjoy the activity in relative solitude. Once that value is lost, demand will fall. Thus, recreation use days can never compete with more user intensive activities such as timber demand. The Plan and DEIS fail properly to consider a realistic value for wildlife and fish

The DEIS identifies seven social groups likely to be affected by the management activities. Plan III.13. In doing so, it fails to identify an important eighth group and thereby discounts amenities values. The citizens of the State of California are directly affected by the Tahoe Forest Plan. People in this State take pride in its unparalleled natural beauty and have a strong interest in preserving it. This is true even for those who may simply drive through the forest or for those who have never been there. The existence of a protected forest has value to the State and its citizens as an important part of the overall environment and its tourist trade. The Tahoe forest has a value in its existence outside of a direct "use." The Plan and DEIS fail to discuss this social group or account for it in its management determinations.

Timber

The Plan's proposed timber provisions--particularly the clear-cutting policy--have, rightfully, created substantial controversy. The Plan proposes a substantial increase in clear-cut techniques which remove from the tree stand all living vegetation and returns the area to the state of early succession. First, NFMA Section 6(g)(3)(F) requires a finding that clearcutting is the "optimum" method for timber harvesting. Clearcutting is allowed only where such cuts are carried out "in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, esthetic resources." The DEIS contains no discussion of relevant impacts

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Geri B. Larson, Forest Supervisor
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June 6, 1986

Second, the general NFMA provision concerning timber harvesting, section 6(g)(3)(E), requires.

the agency to provide empirical guarantees that timber harvesting will not damage soils, water conditions, and fish habitat ...

The suitability guidelines have special applicability to plans for timber harvesting and logging road construction in previously roadless areas. Typically, these are lands where harvesting has not yet taken place due to their steeper slopes, thinner and less stable soils, and shorter growing seasons. Further, because of the remoteness of roadless areas, less factual data on soils and reforestation potential is likely to be available. Planners must carefully inventory and evaluate these areas to "insure" their suitability before allowing timber harvesting to occur.

Wilkinson & Anderson. "Land Resource Planning in the National Forests." 64 Oregon L. Rev. 1, 161 (1985). The DEIS and the Plan contain no meaningful discussion with respect to these issues. Nowhere is the environmental effect of timber harvesting, increased level of harvest, or clear-cutting directly addressed with specific reference to actions to be taken in the Tahoe National Forest. Making a reasonable consideration of the proposed Plan impossible

Third, NFMA section 6(g)(3)(B) requires that timber production be balanced with wildlife and ecological values, that forest conversions be limited to situations where non-timber resources receive benefit, and that monoculture be avoided. "These three elements .. require the Forest Service to look at the forest as an ecological whole and to ensure that, over time, the forest is not converted into a "tree farm."" 64 Oregon L. Rev. at 173. The Plan and the DEIS contain wholly insufficient discussions of these issues; the reader can only guess at the effects of clear-cutting on wildlife, forest conversion, and the creation of monoculture.

Fourth, Forest Service regulations, promulgated pursuant to NFMA section 6(g)(3)(B) permit reduction in the diversity of plant and animal communities "only where needed to meet overall multiple-use objectives." 36 C.F.R. § 219.27(g). The Plan and the DEIS fail to address sufficiently the effect of clear-cutting, increased road access, and the increase in

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Geri B. Larson, Forest Supervisor
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timber harvesting or diversity, and in those cases in which diversity is affected, no showing of necessity has been made. While clear-cutting is appropriate in some situations, see Plan-DEIS appendix L, the Plan and DEIS contain no specific discussion of the appropriateness of the highly disruptive technique with respect to the Tahoe National Forest. For example, the Sierra Forests often consist of conifers which grow naturally in uneven-aged forests. The DEIS and Plan do not consider or discuss the effects of clear-cutting on this growth pattern or the replanting of the uneven-aged stand with an even-aged stand.

The Plan and DEIS lack any meaningful consideration of soil loss, nutrient loss, productivity decline, increased occurrences of catastrophic events, erosion, slope, shade needs, fire tolerance, age structure, species-type, watershed, or the increased need for herbicides or other items related to clear-cutting, road building, and increased timber harvest. The information imparted is woefully inadequate 2/

The use of the forest by all in this and future generations depends on a full and proper consideration of alternatives and consequences. Economic efficiency or administrative ease does not, by itself, convert clear-cutting into the optimum option for timber harvesting. The DEIS and Plan lack forest specific analyses let alone site specific review. The DEIS and Plan fail to consider sufficiently the economic propriety of the timber proposals. Federal subsidies for road building affect the economic viability of timber harvesting 36 C.F.R. § 219.14(b). Once again, the DEIS and Plan lack appropriate discussion of the federal subsidy and of costs associated with logging in specific limited access areas of the Tahoe forest.

As a result of numerous omissions and unsubstantiated generalizations, the DEIS and Plan present a glossed rendition of timber harvesting, road building, and clear-cutting. The omissions preclude the public's right to be informed as well as a reasoned agency decision.

2. Under California law, for example, each timber operation requires submission of a Timber Harvesting Plan which sets forth in detail and with specificity the relation of the harvest to water, erosion, soil, slopes, fire, and all deviations from strict and voluminous regulations governing timber harvesting 14 Cal. Admin. Code § 1034.

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Gerl B. Larson, Forest Supervisor
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Wilderness

The DEIS notes that the California Wilderness Act of 1984 designated 18,705 acres of the Granite Chief RARE II Area as wilderness while releasing all other roadless areas for consideration for non-wilderness uses. The Forest Service retains the authority to maintain the roadless areas as semi-primitive areas without roads, allowing them to be reconsidered as wilderness areas in the future. In the vast majority of cases the Plan does not designate the roadless areas as semi-primitive. Evaluation of environmental impact on these areas is also non-existent. Nothing indicates the effects of roads, logging, or other development in these areas. In many instances, development in the roadless areas will preclude their future inclusion as wilderness areas. The importance of the development envisioned by the Plan necessitates an exponentially greater discussion of environmental consequences. Cf. California v. Block (9th Cir. 1982) 690 F.2d 753.

Water

One of the most important and delicate of the forest's resources is its riparian assets. Planners must give special attention to lands "approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water." 36 C.F.R. § 219.27(e) The regulations concerning riparian areas were designed to "assure intensive planning" because of their importance as providers of highly productive timber range land, critical wildlife habitat, and water-oriented recreation. "Final Report of the Committee of Scientists," 44 Fed. Reg 26, 599, 26, 607 (1979); see 64 Oregon L. Rev at 223 The Plan and EIS contain no "intensive" planning or analysis of effects with respect to riparian areas, including the effects of roads, clear-cutting, and increased timber harvesting. There is no discussion of possible Clean Water Act pollution problems from soil and tree cuttings. See e.g., 33 U.S.C. § 1362(6).

Herbicides

The Plan and DEIS lack specific discussion of the effects of herbicides under any of the alternatives on either the environment or on human health. Once again, it is impossible to reasonably evaluate alternatives in the absence of such important data and analysis.

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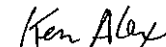
Conclusion

The Proposed Plan and the DEIS are inadequate and incomplete in numerous respects. They fail to consider a truly meaningful range of alternatives and present such a generalized discussion of important issues as to render analysis of little value. The future of the forest and the potential far-reaching effects of clear-cutting, road-building, and increased timber harvesting demand more extensive, responsive, and detailed consideration.

such detailed consideration cannot be deferred until the final EIS review stage or other proceedings. This is the opportunity for public and governmental comment upon — Plan's environmental impacts. Without a more meaningful DEIS and Plan, the opportunity will be lost and the future of the forest may be jeopardized.

Very truly yours,

JOHN K VAN DE KAMP
Attorney General



KEN ALEX
Deputy Attorney General

KA:krh

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State of California
Board of Forestry
 1416 NORTH STREET
 SACRAMENTO CALIFORNIA 95814
 (916) 415-2921
 May 29, 1986

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GEORGE DEUKMEJIAN
GOVERNOR

Ms Geri B Larson
 Page 2
 May 29, 1986

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Ms Geri B Larson
 Forest supervisor
 Tahoe National Forest
 Highway 49 e Coyote Street
 Nevada City, CA 95959

Dear Geri

The California State Board of Forestry (Board) has completed its review of the Tahoe National Forest Draft Management Plan. Several areas of concern were identified during this review. Based on these concerns the Board approved and supports several recommendations which they feel should be addressed in the final management plan for the Tahoe. By law, the Board is charged with representing the State's interests in federal land matters pertaining to forestry.

The Board has approached the plan in the belief that the Tahoe National Forest (Tahoe) should be positioned to meet the needs of the people of California in the coming decade. Our analysis indicates that demands for more recreation, a stable timber supply, a reliance on the forest for local revenue, and a well protected biological base are all part of that position.

The Tahoe Draft Plan and Draft Environmental Statement were compared with the five issue areas developed at the Board of Forestry's Centennial Conferences of March and December of 1985. The issues identified are 1) rural economic stability and development, 2) protection and maintenance of the biological base, 3) social pressures in the rural land base, 4) rights and responsibilities of public and private ownership, and 5) coordination and planning.

As a result, six areas of concern were identified for this region of the state. These areas are 1) silvicultural systems and their application, 2) checkerboard ownership, 3) aggregate review of forest plans, 4) budget constraints, 5) fire protection, and 6) user fees. These six issues were used by the

Board to evaluate each alternative and to help determine which alternative would best meet the needs of this region of the state. The results of this analysis and the Board's recommendations are listed below.

Recommendations.

I Preferred Alternative

Although special interests groups seldom support the same alternatives, the Board sees the need to provide a balance of recognizing the needs of local communities and counties which depend on the outputs from the National Forest and the need to protect the resources of the state for future generations. The Board thus supports the preferred alternative (PRF) for incorporation into the final plan. It provides a good mix of goods, services and benefits from the National Forest.

The PRF also will maintain timber production for the timber industry. It also will maintain national forest receipt payments to the counties at or above current levels for local schools and roads.

2 Silvicultural Systems and Their Application

The use of even-aged management and clearcut harvesting methods are pivotal issues in the plan. Clear cutting has been much maligned, but it remains an essential silvicultural tool in California. Thus, it is vital that the Tahoe show it is possible to conduct clearcut operations which have little environmental damage. People must understand even-aged management and see outstanding examples of its application.

The Board recommends that the Tahoe incorporate into the final plan a program to show the public that even-aged management can be conducted in a manner that will not cause an environmental disaster. It is suggested that this be accomplished through 1) a public information program, 2) a commitment to excellence in the planning and preparation of clearcut harvest areas, and 3) a continuation of strong

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Ms Geri B Larson
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programs to ensure protection of other non-timber resources such as wildlife, water, recreation and visual quality where clearcut harvesting will be practiced

3 Checkerboard Ownership

The problems inherent for the respective land managers of a checkerboard ownership pattern are difficult. It is imperative that everything be done to resolve questions of trespass, establishing and identifying property boundaries, and management objective and policy differences

In the future, pressure will grow to Convert and sell private lands within the National Forest for subdivisions or rural homesite use. This would create new and increasing problems for the Tahoe in coping with an expanding number and variety of private landowners who have land use objectives that may conflict with adjoining federally-owned lands

The Board recommends that the Tahoe endorse and incorporate into the final plan a vigorous program of land exchange or purchase which will consolidate federal and private lands in the Tahoe National Forest.

4 Aggregate Review Of Forest Plane

Our analysis indicates that five counties will be primarily affected by the plan Nevada, Placer, Plumas, Sierra and Yuba. These counties contain five other national forests which will also have an impact on them. The inability to review these plans simultaneously is a significant limitation because their aggregate effects might be significant. This highlights one of the major shortcomings of the present "forest by forest" planning process. The Board recommends that to resolve this concern, aggregates of plane by economic region be reviewed before final decisions on preferred alternatives are made for individual national forests

5. Budget

Given Gramm-Rudman budget adjustments, it appears that the Tahoe National Forest may not reach full funding of the PRF

alternative. The Board recommends that the final plan fully explain in detail the fall back position in the event that the chosen alternative is not fully funded at the proposed budget level. From the Board's viewpoint, programs in such a circumstance should first provide for protection of the biological base, provide secondly for adequate log supplies, and thirdly meet recreation needs.

6. Fire Protection

Given the Gramm-Rudman budget adjustments which are currently proposed for Forest Service fire protection program in the California region, the Board recommends that the final plan fully explain how the plan will maintain adequate fire protection under the chosen alternative

7 User Fees

Given the potential for budget reductions, the Board recommends that the final plan explore the possible alternatives for recreational user fees

Thank you for the opportunity to comment on the Tahoe National Forest Management Plan

Sincerely,

Harold A. Walt

Harold R. Walt
Chairman

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STATE OF CALIFORNIA

GEORGE DEUKMEJIAN Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD--
CENTRAL VALLEY REGION

155 STREET
SACRAMENTO CALIFORNIA 95816-7090
PHONE (916) 445 0270



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30 May 1986

Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, CA 95959

PROPOSED LAND AND RESOURCE MANAGEMENT PLAN (LRMP) AND ASSOCIATED DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR TAHOE NATIONAL FOREST

Thank you for providing me with the opportunity to review and comment upon the copies of the proposed LRMP and supporting materials. Over one half of the National Forest lands in California are located within our jurisdiction and the quality of the waters in the forests is essential to maintaining the environmental and economic values of the streams and rivers throughout the Central Valley Region.

The comments we have reflect an overall concern that the increased level of water quality impacting activities identified for the Preferred Alternative (PRF) can be associated with a greater likelihood that the beneficial uses of the Forest's waters will be impaired. AS the documents emphasize, extra effort will be required to maintain an effective water quality control program. We feel that the key elements of an effective program are timely implementation of the Forest Service's best management practices (BMPs) and diligent enforcement and monitoring of their application.

Some of our concerns may stem from a lack of detail about the implementation, enforcement, and monitoring aspects of the Tahoe National Forest's (TNF) program for water quality control. We are aware that there is a practical limit to the amount of detail that can be provided in these reports. However, in light of the potential water quality impacts associated with the increases in timber harvest, mining, road construction, recreation, grazing, burning, and herbicide application, we have a number of specific questions and comments which we feel are crucial to clarifying water quality issues associated with implementation of the PRF (see Attachment). Our comments also apply to any other alternative which has the potential to degrade water quality.

Tahoe National Forest

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30 May 1986

We look forward to continued participation in your planning process and hope that our comments are of value. Please contact me at (916) 322-1605 or David F. Meith at (916) 322-1619 if you have any questions.

Jerrold A. Bruns

JERROLD A. BRUNS, Chief
Standards, Policies, and
Special Studies Section

DFM:mjm:lj

Attachment

cc: Mr. Ken Fellows, The Resources Agency, Sacramento

10836

ATTACHMENT
Tahoe National Forest

Attachment

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- (1) The LRMP and DEIS contain numerous references to projects and project specific mitigation.
 - a) What constitutes a project?
 - c) Does a project oriented approach to mitigation ensure that all activities which have the potential to impair beneficial uses are identified in time to develop or implement appropriate mitigation or protection measures?
 - d) What are examples of Projects for timber harvest, recreation, construction, mining, burning, grazing, and herbicide application activities?
 - b) Does an activity have to have project status in order to have BMPs or other water quality protection measures imposed?
- (2) What are "water influence zones" as described on page 111.23 of the LRMP?
- (3) What are examples of incorrect application of management practices that would result in water quality decreases (page 111.29, LRMP).
- (4) Of the 629,018 acres described in Appendix K as tentatively suited for timber production, 105,000 acres are characterized as having "oversteepened slopes, very high erosion potential, or instability". (page III.36, LAMP). The discussion in Appendix K also indicates that no productive forest land is classified as unsuitable for timber production on the basis for irreversible damage to watersheds.
 - a) What considerations go into a determination that irreversible damage will or will not occur?
 - b) How are slope and other erosion potential soil characteristics factored into such considerations?
 - c) How much of the 105,000 acres of sensitive soils has been logged?
 - d) If 48,000 acres of the 105,000 sensitive soil acres are "capable" of producing commercial timber, but all the 105,000 is still "suitable" for production, what is likely to happen to the remaining 57,000 acres?
 - e) Have any of the 105,000 acres been commercially logged in the last 20 years?
- f) How did the 23,000 acres described as "significantly altered" (page 111.36, LRMP) reach that state?
- g) What is the relationship, if any, between the page described as (having a) "declining watershed condition" (page III 29, LRMP) and "significantly altered" (page III 36, LRMP)?
- (5) What is involved in a "second-order" inventory and how is the determination made that one is required? (page III 36, para 4, LRMP).
- (6) If road standards are reduced, will that mean that application of erosion control measures for road construction will be decreased? (page 111.38, para. 4, LRMP)
- (7) With regard to the second test of timber suitability (page K. 10, Appendix), how critical is herbicide use to a conclusion that "all such lands can be adequately restocked within five years after final harvest"?
- (8) The Fish section of the Affected Environment Chapter of the DEIS (page 3.39 et seq.) lists 4,396 surface acres of lakes, reservoirs, and ponds as having fair or poor water quality. Since pollution is, at least, detectable under the criteria used, which lakes and reservoirs in TNF have pollution and what does the pollution consist of?
- (9) For the same part of the DEIS as noted above, which rivers and streams have pollution and what does it consist of?
- (10) What are the considerations for concluding that. a) it will be possible to protect SMZ's adjacent to perennial, intermittent and ephemeral streams on tractor-loggable ground; and b) it is questionable whether SMZ's can be protected adjacent to intermittent and ephemeral streams on cable-loggable ground? (page 3.58, DEIS)
- (11) Why does an "emphasis on regeneration harvesting with attendant site preparation activities, such as broadcast burning" result in relatively little impact on SMZ's (page 3.58, DEIS)
- (12) How many miles of streamsidess currently are considered damaged (i.e., compacted or eroded) because of grazing? (pages 3.58-3.60, DEIS).
- (13) What and how much monitoring has been done to conclude that approximately 98% of the runoff originating within the TNF boundaries meets State and Federal water quality objectives? (page 3.80, DEIS)
- (14) What is the status of the development and implementation of measures to restore or protect the 14,000 acres of watershed which are in a condition of decline? (page 3.83, DEIS)

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Attachment

-3-

- (15) Is it appropriate to increase SMZ widths to account for the increase in "overall Forestwide flammability" brought about by the greater amount of acres of plantations called for in the plan? (page 4.27, DEIS).
- (16) What are examples of "slight, unavoidable deterioration" in local water quality which would be expected if certain alternatives are approved? (page 4.121, DEIS)
- (17) What is the estimated amount of acreage to be treated with herbicides in the first five decades after approval if the PRF is implemented?
- (18) Will every project or activity which has the potential to impair beneficial uses be monitored and evaluated for compliance?
- (19) What steps will be taken to obtain the sediment and turbidity values necessary to do useful monitoring? (page 111.29, LRMP).
- (20) Are TNF staffing and funds to be increased to handle additional water quality assurance workload that will occur if the PRF is approved?

5/30/86

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION2092 LAKE TAHOE BOULEVARD
P O BOX 9428

SOUTH LAKE TAHOE, CALIFORNIA 95731-2428

(916) 544-3481

June 4, 1986

Geri B. Larson
Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, CA 95959REVIEW OF TAHOE NATIONAL FOREST LAND AND RESOURCE PLAN AND DRAFT ENVIRONMENTAL
IMPACT STATEMENT

Dear Mr. Larson:

We have reviewed the documents above. Only the portions of the Tahoe National Forest within the Truckee River and Little Truckee River watersheds are within the Lahontan Regional Board's jurisdiction, and the following comments should be understood to refer to this area.

1. A number of potential projects to be implemented under the preferred plan alternative could have significant water quality impacts. The Environmental Impact Statement (EIS) discusses impacts and mitigation measures in very general terms. We understand that the EIS will be used as the basis for tiered environmental documents for specific projects. We would appreciate the opportunity for early consultation on all projects which, if not adequately mitigated, could significantly affect water quality in our region (before issuance of a decision notice). Waste discharge requirements will be needed for major projects such as new or expanded ski areas. Environmental documents for such projects should meet the requirements for content and circulation of the California Environmental Quality Act.

2. The EIS recognizes that the preferred alternative has "moderate to high potential" to damage Stream Management Zones and the aquatic ecosystem, and projects that it will inevitably result in some water quality degradation on a forest-wide basis, although state and federal water quality standards will be met. Probably the most important standard which applies to the Truckee and Little Truckee River watersheds is the non-degradation standard. In order to allow degradation of these high quality waters, the Regional Board must make findings of overriding considerations. The final EIS should give additional consideration to applicable state water quality plans and standards, including, for the Lahontan Basin, the non-degradation policy, the prohibition against discharges within 100 year flood plains, and the narrative Water quality objective which prohibits concentrations of pesticides in waters of the region greater than the lowest detectable concentrations using the latest detection procedures.

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3. Water quality mitigation measures are forest-wide standards and guidelines, including the Best Management Practices contained in the Forest Service's current statewide "208" Plan. The currently proposed revision of that plan's "Best Management Practices Handbook" is not discussed. It should be recognized that Best Management Practices are not 100 percent efficient in protecting water quality, and that additional mitigation (i.e., greater protection for riparian areas) may be necessary to avoid water quality degradation.

4. We support the proposal to protect and increase habitat for the threatened Lahontan cutthroat trout. All waters of the Truckee River system not currently supporting this species are designated in our water quality plan for the potential beneficial use of "Rare and Endangered Species" habitat in recognition of possible recovery of the species. Resource management activities under the new forest plan, including road and ski area construction and timber harvest, should be evaluated in terms of their long-term cumulative impacts on this existing and potential beneficial use. If the Macklin Creek management area on the west slope, which supports a pure strain of the Pyramid Lake Lahontan cutthroat trout, is not to be designated as a Special Interest Area, it should receive special water quality protection in connection with any resource management activities.

5. The Truckee and Little Truckee River watersheds include several candidate Special Interest or Research Natural Areas with values related to aquatic habitat (Mt. Lola, Sagehen Headwaters, Sagehen Creek Basin/Mason Fen, Independence Lake). Under the preferred alternative, only the Sagehen Headwaters unit would be designated a Special Interest Area. We would support either special designation for the areas listed above, or special management prescriptions to preserve their water related values during subsequent resource management activities.

6. We would appreciate the opportunity to review annual reports on monitoring results for water quality parameters and indicators within the Lahontan Basin. We would also like to be notified of water quality problems as they are discovered; the management area statements identify several problem areas which will eventually be addressed in our planning and/or enforcement activities.

7. On page V-269 of the plan, a portion of the Truckee River watershed within the jurisdiction of the California Tahoe Regional Planning Agency is mentioned. It should be noted that this agency has been deactivated under the revised bistate Tahoe Regional Planning Compact, and that its functions have been assumed by the Tahoe Regional Planning Agency.

Please contact Judith E Unsicker at this office if you wish to discuss these comments.

Very truly yours,



JAMES KUYKENDALL
INTERIM EXECUTIVE OFFICER

cc: Regional Board members
SWRCB, Division of Water Quality
Region 5, Sacramento
Department of Fish and Game, Rancho Cordova
State Clearinghouse/Peggy Osborn

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Department of Forestry
Department of Parks and Recreation
Department of Water Resources

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CALIFORNIA



THE RESOURCES AGENCY OF CALIFORNIA
SACRAMENTO CALIFORNIA

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Air Resources Board
California Coastal Commission
California Tahoe Conservancy
California Waste Management
Board
Colorado River Board
Energy Resources Conservation
And Development Commission
San Francisco Bay Conservation
and Development Commission
State Coastal Conservancy
State Lands Division
State Reclamation Board
State Water Resources Control
Board
Regional Water Quality
Control Boards

Ms. Geri Larson
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, CA 95959

June 2, 1986

Dear Ms. Larson:

The State has reviewed the Proposed Tahoe National Forest Plan and Draft EIS, submitted through the office of Planning and Research. Review was coordinated with the Regional Water Board and the Departments of Conservation, Fish and Game, Forestry, Parks and Recreation, Water Resources, Health Services, and Transportation.

Attached for your consideration are detailed comments received from the Departments of Fish and Game, Forestry, and Parks and Recreation.

The Lahontan Regional Water Board has commented directly to you.

The Department of Conservation comments that Alternative J would be the most favorable alternative for mineral production. Although it withdraws more acreage from mineral entry than some other alternatives, the emphasis on mineral development of this plan would tend to resolve any land use Conflict in favor of mineral production.

The Department also recommends that the final EIS contain specific definitions for the three criteria used to develop the mineral potential ratings, as well as an explanation of how they were applied and weighted or valued. Further, the final EIS should indicate the land status of lands to be withdrawn under Alternatives B, R, I, and J.

Finally, the Forest Plan should specify that any future mining activities within the Forest will be permitted only after approval of a reclamation plan consistent with both State and Forest Service guidelines.

Questions regarding the Department of Conservation's comments should be sent to Zoe McCrea, Division of Mines and Geology, 1416 Ninth Street, Sacramento 95814. Her phone number is (916) 322-3202.

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Page Two
SCH 86010601

The Department of Water Resources (DWR) is primarily concerned with the proposed plan's water supply and quality aspects. Although the range of alternatives is not great, DWR prefers those that improve water quality while increasing yield.

Table 4.35 shows a substantial variation among the decadal increases in water yield (runoff). Because of this variation, higher increases could occur in very wet years (and not be usable) and little or no increase could occur in dry years. DWR recommends improving the reliability of the increased runoff by including in the management plan a policy to coordinate timber harvest, reforestation, fuel management, and range improvement.

DWR recommends that Protection of reservoirs from undue sedimentation be considered as a benefit in the economic analysis of alternatives. Sedimentation is a major cause of Water quality impairment and can diminish dependable water supplies and hydroelectric energy production when trapped by reservoirs.

DWR also recommends that the final EIS discuss methods for locating wells and developing springs to obtain water and protection of ground water resources from contamination by septic system effluent, recreational vehicle effluent, and chemical applications. DWR believes that the Forest Service rationale for not providing a geologic resource inventory does not address the importance of managing such ground water resources as springs and wells, areas of recharge, and ground water contamination within the National Forest.

Questions regarding these comments may be directed to Ken Turner at (916) 445-7685 or Jake Compton at (916) 4115-2501.

Thank you for providing an opportunity to review this document.

Sincerely,

Gordon F. Snow, PhD
/Assistant Secretary for Resources

Attachments (3)

cc: office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

(SCH 86010601)

State of California

The Resources Agency

Memorandum

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11,320

To . Honorable Gordon K. Van Vleck
Secretary For Resources
The Resources Agency
1416 Ninth Street, Room 1311
Sacramento. CA 95814

Date . May 27, 1986

R8

Telephone: ATSS (8) 492-0163
(916) 322-0163

Attention: Mr. Gordon Snow
Assistant Secretary
From . Department of Forestry

Subject 0600 EXTERNAL RELATIONS
0660 Federal Agencies
U.S. Forest Service - Tahoe
National Forest Draft Management Plan

CALIFORNIA DEPARTMENT OF FORESTRY'S
RECOMMENDATIONS ON THE TAHOE NATIONAL FOREST PLAN

The California Department of Forestry has completed the review of the Tahoe National Forest Draft Management Plan. Several areas of concern were identified during this review process. These areas are: 1) silvicultural systems and their application; 2) checkerboard ownership; 3) aggregate review of forest plans; 4) budget constraints; 5) fire protection; and 6) user fees.

Based on these concerns, the Department has developed several recommendations which we feel should be addressed in the final management plan for the Tahoe National Forest. These recommendations are listed below.

Recommendations

1. Preferred Alternative

Although special interests groups seldom support the same alternatives, the Department sees the need to provide a balance recognizing the needs of local communities and counties which depend on the outputs from the national forest and the need to protect the resources of the state for future generations. The Department supports the preferred alternative (PRF) for incorporation into the final plan, as providing a good mix of goods, services and benefits from the national forest.

The PRF also will maintain timber production for the timber industry which directly maintains national forest receipt act payments to the counties at or above current levels for local schools and roads. The Department also supports this

2. Silvicultural Systems and Their Application

The use of even-aged silvicultural systems (clearcut and shelterwood harvesting) have come under severe criticism in many areas of the State and the nation for many years on both private and public lands. The Department recognizes that even aged management can be conducted in a manner that does not cause significant environmental damage. In addition, it is also recognized that severe long-term environmental problems can be have resulted from poorly planned and supervised clearcut harvest operations.

Enclosed are the Department of Forestry's recommendations on the Tahoe National Forest Draft Management Plan.


JERRY PARTAIN
Director

et

Enclosure

The Department believes that clearcut timber harvesting when properly distributed over time and space, and when used in conjunction with other silvicultural systems, should not create a significant degradation of the environment on the Tahoe National Forest

The future use of even-aged management and clearcut harvest operation in California and the nation may be determined by what happens on the Tahoe. The Tahoe is, and will continue to be, in the eye of the people of the state and nation. The ability of the Tahoe to conduct clearcut operations which have little environmental damage is an important necessity. The need for people to understand and to see outstanding good examples of the application of clearcut timber harvesting is needed and may be critical to future use of the even-aged management systems in California.

The Department recommends that the Tahoe recognize the need to incorporate into the final plan a program which ensures that a major effort will be made showing the public that even-aged management can be conducted in a manner that will not cause an environmental disaster. It is suggested that this be accomplished through 1) a public relations effort, 2) a commitment to excellence in the planning and preparation of clearcut harvest areas, and 3) a continuation of strong programs to ensure protection of other non-timber resources such as wildlife, water, recreation and visual quality where clearcut harvesting will be practiced.

3. Checkerboard Ownership

The problems inherent for the respective land managers of a checkerboard ownership pattern are so well known it seems unnecessary to enumerate them. However, problems of trespass, establishing and identifying property boundaries, and management objective and policy differences are only some of the problems.

It is not difficult to envision the conversion and sale of private lands within the national forest to subdivisions or rural homesite use. This would create new and increasing problems for the Tahoe in coping with an expanding number and variety of private landowners with land uses and objectives that are likely to be in conflict with adjoining Tahoe lands. It is also easy to rationalize that there is not a significant problem now but it is expected that by the end of the fifth decade that rationalization will probably not be valid.

It is the recommendation of the Department that the Tahoe endorse and incorporate into the final plan a vigorous program of land exchange or purchase which will consolidate federal and private lands in the Tahoe National Forest.

4. Aggregate Review of Forest Plans

Our analysis indicates that 5 Counties will be primarily affected by the plan: Nevada, Placer, Plumas, Sierra and Yuba. These Counties contain 5 other national forests which will also have an impact on them. The inability to review these plans simultaneously is a significant limitation because their aggregate effects might be significant. This highlights one of the major shortcomings of the present "forest by forest" planning process. The Department recommends that to resolve this concern, aggregates of plans by economic region be reviewed before final decisions on preferred alternatives are made for individual national forests.

5. Budget

Given Gramm-Rudman budget adjustments, it appears that the Tahoe National Forest may not reach full funding of the chosen alternative. The Department recommends that the final plan fully explain in detail the fall back position in the event that the chosen alternative is not fully funded at the proposed budget level.

6. Fire Protection

Given the Gramm-Rudman budget adjustments which are currently proposed for Forest Service fire protection program in the California region, the Department recommends that the final plan fully explain how the plan will maintain adequate fire protection under the chosen alternative.

7. User Fees

Given the potential for budget reductions, the Department recommends that the final Plan explore the possible alternatives for recreational user fees.

Memorandum

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11,320

Date : March 13, 1986

To : Gordon F. Snow, Ph.D.
Project Coordinator
Resources Agency

From : Department of Parks and Recreation - Richard G. Rayburn

Subject: Tahoe National Forest
Land and Resource Management Plan
SCH # B&O10601

The Department of Parks and Recreation has reviewed the subject document. Several aspects of the Draft Forest Plan affect the recreational programs and State Park System resources of this Department. Our primary concerns include the Sno-Park Permit program, the resources of Malakoff Diggins State Historic Park, which is surrounded by Tahoe National Forest, and several other State Park System units that may be affected by changes in the regional ecosystem.

The Forest Plan addresses a common goal of this Department and the U.S. Forest Service in providing recreational opportunities through coordinated efforts of our agencies. Each winter, the snow-covered high mountains of California attract more people interested in snow-related recreational activities. There is, consequently, an increasing demand for safe, snow-cleared, roadside parking areas.

The State of California, with the cooperation of the U. S. Forest Service, is attempting to address this need through the California Snow-Park Permit Program. In support of this program, the Forest Plan should identify specific sites that could be recommended for formal designation as Sno-Park sites and, if needed, should give consideration to a financial plan for providing the necessary grading and paving to support the weight of snow removal equipment. Additional information on the Sno-Park Permit Program was obtained from Len Martin, California Department of Parks and Recreation, Planning Division, Box 942596, Sacramento, CA 95825, telephone (916) 222-8593.

The resources of Malakoff Diggins State Historic Park would be adversely affected if they were under the management of the Tahoe National Forest. Our primary concerns are related to timber resources, wildlife habitat and land adjustments.

Gordon F. Snow, Ph.D.
March 13, 1986
Page 2

No single alternative in the proposed Forest Plan adequately addresses each of these areas; and no alternative specifically relates to the State Historic Park property within the National Forest. The Draft Environmental Impact Statement (p. 4.122) states that "no known conflicts exist" between the State and Tahoe NF land management planning. In fact, some National Forest land management prescriptions are in direct conflict with this Department's resource management goals.

Among the proposed alternatives, Alternatives E, and G--with some modifications--appear to offer relatively better land management prescriptions affecting local State Park System units. We foresee problems with Management Prescription #13, which has been assigned to all areas bordering Malakoff Diggins State Historic Park. We believe that this prescription, which calls for "intensively Managed Timber and Forage Resources," will significantly impact Historic Park values.

Timber harvest practices would certainly affect the resources of the SHP. An even age silviculture system will degrade the visual quality, increase potential erosion into the Humbug Creek watershed, and decrease the key winter deer range as shown on the Forest Plans Fish and Wildlife Element map. The single age class option will, in our opinion, reduce the wildlife habitat for the majority of the wildlife species in the Forest, including those species present in the SHP.

In regard to the use of "capability areas" in planning criteria (p. 2.3), we believe that in order to maintain ecological and genetic diversity, at least 10% of each capability unit should be retained in an undisturbed, natural state. Such undisturbed areas are necessary as ecological baselines and gene pools.

The maintenance of genetic variation within a timber species is important to tree improvement programs, and their management is implicit in silvicultural planning. In Douglas-fir, for example, variability is expressed both within and among populations. In order to maintain the ecotypic variation within a species, which is so important in maintaining adequate gene pools, a portion of each "capability area" should be maintained. Regardless of the origin of genetic variation, both adaptive characteristics and variety of performance traits have value to forest management and timber production. Adaptive variation is important if significant portions of forest land are to continue to be regenerated naturally, and if timber production is not to become reliant on expensive cultural practices. Variation in many other traits may be the basis for fulfillment of new market demands or accommodation of changing environmental conditions in the future.

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March 13, 1986
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In order to maintain soils at a productive level (i.e. control accelerated erosion) clearcutting and shelterwood cutting should be done only on slopes of less than 15%. These silvicultural systems (p. 231) should be limited to low elevation, west side, ridges where soils are deep and relatively low in erosion potential.

Forage resources management is another important concern. We have experienced problems with cattle trespass, from the leased USFS grazing lands adjacent to the State Historic Park, for some time under the current policy. Prescription #13 of the proposed Forest Plan appears to threaten an increase in this problem, consequent to more intensive and extensive systems management. If Prescription #13 is adopted, we urge the Forest Service to fence its grazing lease properties to eliminate cattle trespass on State lands.

Proposed Prescriptions #13 and #15 in the Yuba and American River watersheds could have a significant impact on regional ecosystems, in turn threatening aquatic ecosystems in our properties. Auburn State Recreation Area, Folsom Lake State Recreation Area, and the South Yuba River Project. Drastic disturbances to the soil-vegetation mantle could lead to accelerated erosion, increased runoff, stream and reservoir sedimentation loading, reservoir storage loss, and increased flood potential to the Sacramento Valley.

The Forest Plan calls for land adjustments in ownership where Federal parcels are scattered. Where parcels adjoining our property are subject to these adjustments, it would be beneficial to the State if these areas were kept in public ownership as part of Malakoff Diggins State Historic Park. This would not only allow for additional recreational opportunities, but would also protect Park System values by creating visual and natural resource buffer zones against incompatible land uses. Therefore, we request that the State be given the first opportunity to engage in a land adjustment of USFS lands adjoining our property.

In anticipation of possible future land adjustment transactions, we urge the Forest Service to remove key parcels from consideration for other management practices, including timber harvest and grazing, which might render the land unsuitable for Park System purposes.

This Department recommends adoption of Alternative E. If Alternative A is adapted, modifications to Prescription #13 as it affects the lands surrounding Malakoff Diggins State Historic Park, should be implemented. We would prefer that the USFS assign a retention classification for timber harvest on lands within T 17N R5E Sec 12, T 17N RIOE Secs 5, 6, and 7, and T 18N

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March 13, 1986
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RIOE Secs 32 and 33, in order to maintain the visual quality and Wildlife habitat of the area adjacent to the State Historic Park. Any grazing allocated to these areas should be monitored carefully to prevent cattle trespass and impact on wildlife.

A buffer zone around the southerly and easterly boundaries of the Park should use a combination of Prescription #s 7, 8, and 15. Our coordinator in this effort is District Superintendent George E. Cook. His address is Gold Mines District, 10556 E. Empire Street, Grass Valley, CA 95945, telephone (916) 273-3884.

We appreciate the opportunity to review this document; please keep us apprised of the progress of the project. Our contact for review of any environmental documents associated with this project is Mr. James M. Doyle, Supervisor, Environmental Review Section, P.O. Box 942876, Sacramento, CA 94296-0001, telephone (916) 324-6421.

Richard G. Rayburn, Chief
Resource Protection Division

Department of Fish and Game Detailed Analysis
of Tahoe National Forest Land and Resource
management Plan and Draft Environmental Impact Statement

-2-

Specific Comments (Part 2 of 3 Parts)

FISHERIES

CASTLE UNIT (Independence Creek)

We have some problems with a portion of the proposed management area direction for the "Castle" unit (No. 044). The area of particular concern is section 8 which is bisected by the inlet to Independence Lake. The proposed management area direction for the Castle Unit including section 8 permits "private recreation management" (winter sports development) - Prescription AF1b; timber access road development - Prescription LD1a; regulated timber management including clearcutting and other forms of intensive management - Prescription EC1c, EC2s, EC3o; and the possibility of reopening the White Rock Allotment for both sheep and cattle. While some of these might be acceptable for some portions of the Castle unit we recommend that these activities be excluded from Section 8.

We consider Section 8 to be of special significance because:

- 1 Section 8 possesses all of the spawning and nursery habitat for the native and federally listed threatened Lahontan

cutthroat trout population residing in Independence Lake. The population of the latter represents the only self-sustaining non-introgressed endemic lacustrine stock of Lahontan cutthroat trout remaining in California and the only verified example of the Truckee River system race of Lahontan cutthroat trout in existence. Only one other self-sustaining endemic lacustrine stock exists and that one is located in Summit Lake, Nevada and is not related to the Truckee River strain.

2. Section 8 incorporates one of the last undeveloped small stream valley ecosystems in the Tahoe National Forest and supports an unusually rich variety of plant communities including riparian shrub, cottonwood, aspen, wet meadow and bog and old growth true fir, Jeffrey and lodgepole pine. The Independence Lake environmental report prepared for the Disney Project notes that "the upper Independence Lake basin is vital to the region's wildlife particularly to fawning does, waterfowl, and shore birds.

Because of these attributes we prefer that Section 8 remain undeveloped. We further believe that the area is ideally suited for Special Interest Area (S.I.A.) or Research Natural Area (R.N.A.) designation. We urge you to seriously consider these classifications. We understand your regional office is drafting criteria for candidate aquatic research natural areas which might be applicable here.

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If the White Rock allotment is reopened to livestock grazing, the watershed of Independence Creek upstream from the lake should be excluded from livestock use including the routing of stock to summer range. The glacial alluvium and volcanic soils in the upper Independence Lake drainage appear to be particularly vulnerable to gully and sheet erosion. Recent gully control and bank erosion control efforts are beginning to produce a notable improvement in cutthroat trout spawning habitat quality.

The Lahontan cutthroat trout management plan recently prepared by the Department of Fish and Game recommends that Section 8 be retained in public ownership and in an undeveloped state. The acquisition of the remainder of the upper Independence Creek watershed should also be considered.

North Fork American River

The management of national forest lands within the North Fork American River canyon is of particular interest to us because it is a component of the State and National wild and Scenic River System as well as State-designated wild trout management water.

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Some of the management prescriptions proposed for the North Fork of the American River canyon in the preferred alternative of the draft plan appear to us to be considerably less protective than those recommended in the past. More specifically the new preferred alternative recommends a prescription for the south slope of the North Fork American River between the canyon rim and the narrow wild river corridor near the canyon bottom, which would direct the Tahoe National Forest to "intensely manage timber" and to "emphasize regulated timber production utilizing even-aged silvicultural systems". In addition most of the area would be managed for a visual Quality objective of "Modification" under the preferred alternative as shown on the LRMP Recreation Element map.

This proposal as we understand it would allow extensive clear-cutting on steep canyon slopes with individual cutting units of up to 40 acres each and would contrast quite significantly from past Tahoe National Forest management directions for the area. For example, the North Fork American River Wild and Scenic River Study Report prepared by the Tahoe National Forest in 1978 states on page 126 that "the visual constraints, steep terrain, critical soils, economics, and designation of the river as a component of the California wild and Scenic River System will tend to reduce the likelihood of commercial timber in the river canyon becoming

part of a standard timber management component". Page 63 of the report states again that timber in the river canyon is not expected to be included in the standard timber management component in the future. At the time this report was written, standard component lands *were* mostly utilized for intensive, even-aged timber management much the same as now proposed in the

preferred alternative. The lack of past emphasis on intensive timber production is further amplified on page 133 with the following statement: "The potential for timber harvest within the river canyon on ELM and National Forest land is insignificant. Steep slopes, scattered stands and low volume will continue to make timber harvest difficult and uneconomical " In view of these past statements our staff finds the changed management emphasis puzzling and questions whether the change is warranted or desirable our staff also notes that the preferred alternative recommends a considerable downgrading in visual quality objectives (VQO's) for the canyon. On page 130 of 1978 report the statement is made that "within the visual river canyon corridor but outside the proposed classified boundary (wild river zone boundary) timber harvesting will be based on providing the retention visual quality objective on National Forest land." As you *know*, this objective provides for management activities which are not visually evident (USDA ag Handbook 462 - Visual Management system). In contrast

under the modification visual quality objective, (as proposed in the preferred alternative for the canyon south of the river) "management activities may visually dominate the original characteristic landscape." Under modification standards the plan would allow clearcut patches of up to 40 acres each

The recommendations contained in the 1978 Tahoe National Forest report for management of the North Fork American River Canyon are much closer to the Department of Fish and Game views stated in the July 1971 North Fork American River Waterway Management Plan than the proposed Tahoe LRMP prescriptions. For example, on page 5-16 the State waterway plan recommends that scenic characteristics of the North Fork American River Canyon be preserved The State plan also emphasizes protecting the clarity of the river *Because* the Department was required by State Wild and scenic River enabling legislation to look at more than just fish and wildlife concerns. other public values such as aesthetics and recreation were incorporated into Department recommendations

While the Department's 1977 waterway plan recognized that future plans might "provide for the use and development of natural resources," the plan recommended that 'resource use not conflict

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with public use and enjoyment of the river" and that basic environmental values of the North Fork canyon should not be adversely affected.

In addition to the 1977 waterway plan the North Fork American River Wild Trout Management Plan prepared by the Department of Fish and Game in 1979 went a step further and recommended wilderness classification for the canyon. We understand, however, that the 1984 California wilderness Act prohibits the Forest Service from recommending wilderness until the next round of forest planning, one to two decades in the future.

In order to resolve apparent conflicts we recommend that lands along the south slope of the North Fork American Canyon below the canyon rim be managed for nonintensive timber management with partial cutting practices. If roads are constructed at all they should be limited to narrow, low impact roads confined to the top one-fourth of the canyon slope. Timber harvesting should be limited to systems involving less vegetation removal such as individual tree selection, shelterwood and overstory removal. Clearcutting and associated site burning should not be permitted below the canyon rim. Yarding utilizing long-span skyline systems with lateral yarding capabilities would permit partial cutting according to your draft plan. Proposed visual quality objectives of "modification" should be replaced with "retention" objectives.

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Riparian and Stream Management Zones

The draft plan standards and guidelines for stream management zones (SMAs) are inadequate and need to be tightened. The draft recommends that all cutting methods and fuels treatment are allowed in the SMZ provided that an effective filtration strip (humus duff or vegetation at least 2 inches thick) and 80% of shade producing overstory vegetation be retained (code No. FC1w, and FC3w) Under another section (code EC7w related to special cutting) there is a requirement that no more than 70% of the last 10 years growth be permitted in the SMAZ.

While these standards and guidelines are an improvement over the present, we believe that they will be difficult to monitor and enforce, considering the predicted reductions in Forest Service manpower. We can foresee situations where entire blocks of trees could be removed from the SMZ if shade-producing shrubs exist. We are also concerned that shade-producing shrubs will be unintentionally incinerated because sufficient manpower is not available to prepare fire lines around riparian corridors prior to broadcast burning or to adequately monitor slash burns. There have been many recent examples of riparian vegetation loss during slash fire.

Another major deficiency in the draft plan is the lack of standards reducing the potential for damage from road construction and standards for maintaining timber for snag-dependent species and for large woody debris recruitment needed for stream stability. streambed diversity and fish habitat. Large woody debris consisting of fallen loge and root wads creates pools and cover for fish and catches gravel essential for salmonid spawning. Numerous studies have revealed that dead and dying trees along stream banks play an essential role in recruiting woody debris and that substantial declines have occurred in salmonid production following removal of large stream bank trees (R.E. Bilby 1984, M.D. Bryan 1953, C.D. Forward 1983, D. Hogan 1984, L.C. Lestell 1978, and J.R. Sedell, F.J. Swanson and S.V. Gregory 1984).

The following are some suggested standards for management of the stream management zone based on standards and guidelines selected from other forest management plans:

1. Replace phrase permitting use of all cutting methods with language which would permit removal of trees or small groups of trees from the SMZ for sanitation, salvage, hazard reduction (language from the Sequoia National Forest LMRP draft).

2. Add: only *uneven-aged* timber management systems will be used in the SMZ and that a natural appearing setting (with a visual quality objective level of "retention") will be maintained in the SMZ along all lake shores and Class I, II and III Streams [language from Eldorado, Stanislaus and Klamath National Forests LMRP drafts).
3. Add: an old-growth habitat component will be maintained for snag dependent species and for large woody debris recruitment as necessary for stream stability and fish habitat (language from Clearwater National Forest LMRP - Idaho)
4. Add: harvest systems which protect residual trees and retain ground cover should be utilized. Ground-based harvest machines should not be permitted to enter the SMZ (language from the Toiyabe National Forest LMRP).
5. Add: design and construct new road systems to minimize disturbance to the SMZ. Provide full stabilization (Eldorado National Forest LMRP draft). Transport of sediment from disturbed areas shall be minimized by ponding, vegetative barrier strips, or other means (language from Toiyabe National Forest LMRP draft).

- 6 Add. log landings shall not be located within SMZ's or on areas where surface runoff will discharge directly into the channel (Toiyabe National Forest LRMP draft)
7. Add. trees shall not be felled into streams, lakes or bogs (Toiyabe National Forest LRMP draft).
8. Tahoe National Forest standards and guidelines related to filter strips in riparian and stream management zones are acceptable provided that the above additions are incorporated in the guidelines

Cummulative Watershed Impact Thresholds

Determination of cummulative watershed impacts for third order watersheds have been postponed until the next round of forest planning

We believe that interim maximum cummulative watershed impact threshold should be established in the current plan. The language used in the draft Stanislaus National Forest LRMP (pg. IV-581 appears to be acceptable and should be incorporated into the Tahoe LRMP ie:

A maximum allowable cummulative disturbance will be used to protect against adverse watershed impacts. No more than 25% of a unit watershed (200 acres or larger) will be in a disturbed condition (less than 50% effective ground cover) at any one time. A disturbed area is considered recovered when the effective ground cover exceeds 50%

Pinoli Management Area

Add: Lahontan cutthroat trout habitat in the headwaters of East Fork Creek within Austin Meadows is being degraded by stream bank erosion. Although this problem is mentioned in the Henness Unit it extends into Pinoli. Establishment of erosion control structures and riparian fencing will be pursued as funds become available.

Grouse Lakes

We concur with the LRMP proposal that this backcountry region continue to be managed as an off-road vehicle exclusion area

Land Acquisition

Acquisition of private inholdings by purchase or exchange at Grouse Lakes and within the North Fork of the American River Wild and Scenic River zone should be given more emphasis.

Miscellaneous observations

Page III. 14 Paragraph 1

This statement minimizes the role of the Department of Fish and Game. A more accurate statement would read:

"National forest lands provide habitat essential to the annual renewability and well-being of a host of fish and wildlife resources. The Fish and Game Commission and the Department of Fish and Game have the responsibility and authority to manage the resident fish and wildlife resources on National Forest lands in this State. Management practices of the U.S. Forest Service can affect fish and wildlife and their habitats and can affect the management of fish and wildlife by the Commission and the Department "

Page III. 16 Paragraph 2.

The use of indicator species is valid where inventory baselines can be established accurately. We believe this is infeasible for rainbow, brown and brook trout because of the influence of stocking programs carried on by the Department of Fish and Game in streams and lakes. Listing population numbers and poundages of these three species as baseline indicators is therefore meaningless. The statement. "The TNF has the potential to emphasize and increase the population of any species currently present" is extremely optimistic and should not be taken seriously. Related to this concept. Page B.11 - B.12 refers to habitat improvement measures which are not identified. We have reservations about lasting improvements attributable to habitat improvement without further description of the methods to be used. In the same context Page B.19 in reference to WFUD's should be revised. WFUD's result from resource values that in most cases already exist and need no "habitat improvement". However, WFUD's do need habitat maintenance.

Department of Fish and Game Detailed Analysis
 of Tahoe National Forest Land and Resource
 Management Plan and Draft Environmental Impact Statement

Specific Comments (Part 1 of 3 Parts)

Land and Resource Management Plan

- P. III 14, Paragraph 2, line 4 and 6: The word "improvements" should be changed to "alterations." Not all indirect activities are wildlife improvements.
- P. III. 14, Paragraph 2, last sentence: Change to include the words "direct improvements" between "All" and "projects".
- P. III. 14, Last Paragraph: Hardwoods are a critical wildlife habitat component of many successional stages on the forest. wildlife habitat diversity is more than a mixture of the types delineated in Figure III. 1, but is also comprised of the mixtures of plant species within each listed type. Many of the types listed, besides the Hardwood-Conifer type, have a significant hardwood component. Representing types 2. 3a, 3bc and 4a as strictly a conifer type is a misnomer and does not clearly reflect wildlife habitat diversity found within the forest

- P III. 17, Paragraph 3, last sentence. Increases predicted for deer could only be achieved through the indirect habitat manipulations of the timber program. Direct programs would not be sufficient. However, large clearcuts, regeneration with close tree spacing, broadcast herbicide application, and hardwood reduction, all measures identified as part of the timber program of the selected plan, can seriously restrict the forest's obtainment of those goals for deer.

All indirect activities must be closely coordinated with wildlife requirements. Regeneration and range objectives and goals as identified in this plan appear to be contradictory to the needed deer habitat requirements to allow successful obtainment of wildlife goals and objectives.

- P. III 17, Paragraph 3, last sentence. The proposed, 33 percent habitat increase for turkey will not result if hardwood reduction occurs as projected in the Plan. The goals of the timber and wildlife program conflict.

P. III. 17, Item g Increased public use should be further explained to describe recreation development including expansion of ski facilities. This activity also is related to items c, d, and h, which all have adverse impacts on specific habitats and impair the ability of DFG to engage in proper fish and wildlife management.

P. III. 18, Item "a": This increase is not likely considering timber and range goals.

P. III. 1a, Item "d": The minimal percent maintained for each successional stage is a decrease from existing levels for each successional stage throughout the forest. The levels to which these stages will be reduced should be identified Forestwide by - Management Area, Sale Area and Harvest Unit.

The level to which these values are assigned can have a significant impact on meeting wildlife goals and objectives. The potential for wildlife resource values of one area to be expended only to be picked up in another area allows tremendous flexibility for competing resource uses at the expense of wildlife. The values for each Compartment should be provided for on that compartment, rather than elsewhere.

P. III. 18, Item "d": Retention of only 10% (about 3150 acres of the current 31,500 acres) of the hardwood-conifer type will conflict with the wildlife goals and objectives through a significant reduction in the available hardwoods. Additionally, an unknown but significant quantity of hardwoods located within the conifer type will be removed through timber harvest and subsequent conversion to conifers

P. III. 18, Item "f": This statement clearly demonstrates the Plan's weakness with respect to maintaining wildlife diversity and ability to reach the Plan's wildlife goals and objectives. For example, consider a 3,000-acre timber sale area composed equally (1,000 acres) of three habitat types (large conifer, medium conifer (dense) and hardwood-conifer). The Plan, after timber activities and using this 5% retention value, could result in only 50 acres of hardwood stands and 2950 acres in a young conifer plantation. The two conifer types may have had a significant hardwood component. That, plus the loss of 950 acres of hardwood-conifer type will result in a significant

reduction in wildlife habitat diversity within the sale area and a low contribution to reaching the wildlife goals and objectives of this Plan.

- P. III. 23, Paragraph 3: Diversity can be viewed in many ways. Defining diversity as a function of the distribution of even-aged conifer stands is not a measure of wildlife habitat diversity. Hardwood reduction through timber activities, and a significant reduction or loss of the brush layer due to conifer release will most likely have an overall significant negative impact upon wildlife habitat diversity forestwide.
- P. IV. 10, Item 3: The plan should state how many AUM's will be allocated for wildlife on the Tahoe NF.
- P. IV. 11, Item 5.6.: The plan provides for a 34% AUM increase in permanent and transitory ranges, but it should be made clear what part of that allocation is made for wildlife.

- P. IV. 18, Development of new downhill ski facilities should be considered when available facilities are built out. Only then should new facilities be considered, and then related to mass transit opportunities in the Interstate 80 corridor. This management direction would promote energy efficiency and forestall impacts on important undisturbed wildlife habitat.
- P. IV. 24, "Fish and Wildlife Habitat", 1.b' Forestwide Standards and Guidelines for wildlife appear to be designed only to maintain viable populations forestwide. Implementation of Standards and Guidelines without other constraints may allow areas of the forest to be managed with little or no regard for wildlife values since viable populations can still be maintained on a forestwide basis.
- The Standards and Guidelines must NOT be construed as providing any measure of wildlife improvement. Standards and Guidelines should be added that provide local and forestwide protection and improvement measures for wildlife

- P. IV. 25, 3.b: The maintenance of viable populations as defined, and diversity levels as described in this plan will not meet the Plan's goals and objectives set for wildlife. This conflict should be clearly indicated and discussed in the EIS.
- P. IV. 25, 4.b.: Although timber harvest will create a potentially improved habitat base for deer, post-harvest silvicultural and range activities, if employed as described in this plan, may nullify potential gains for deer. Additionally, overall hardwood reduction will curtail oak mast production, and in turn reduce an often critical fall and winter forage component for deer. The statement that "deer will increase" should be changed to "deer may increase if suitable restraints on post-harvest silvicultural and range practices are implemented to allow significant forage production for deer in clearcuts and if hardwoods, primarily black oak, are adequately maintained and regenerated in mixed conifer and hardwood-conifer stands in important deer areas.
- P. IV. 25, 4.b., last sentence: This statement needs clarification. To "Emphasize deer management" implies

- incorporating significant and strong measures benefiting deer. Management areas within significant deer areas that identify deer as a "Concern" or "opportunity" rather than an "Issue" have not emphasized deer management. All significant deer areas must be identified as an "Issue" in those Management Areas where they occur. This would allow deer adequate representation among competing resource objectives such as range and timber. Identifying deer populations as an "opportunity" or "concern" leaves deer only with the incidental protection provided by Forestwide Standards and Guidelines - which cannot be interpreted to "emphasize deer management."
- P. V. 3, Item 24: why does the plan call for a limitation on the proliferation of electronic installations (a relatively minor environmental impact yet promote development of non-contiguous ski facilities?
- P. V. 19, Paragraph 2, lines 7-10: Forestwide Standards and Guidelines for wildlife must be considered minimum standards. Forestwide Practices do provide greater emphasis to wildlife but in the event of a resource conflict the Standards and Guidelines take precedence.

Maintenance of wildlife populations and the Plan's commitment to the goals and objectives for wildlife will require stronger and more specific standards and Guidelines for wildlife than those in the Draft Plan.

Fish and Wildlife Element Map

Depiction of key deer winter range could be more accurately accomplished through use of the deer range maps previously made available to you or obtainable at the Region 2 office in Rancho Cordova or the field unit biologists.

"Deer Migration Routes" and "Deer Migration Corridor" are redundant. Using the best information available the arrows on the map should reflect known routes or corridors. The deer range maps should be reviewed for this.

There is a definite lack of information on the Tahoe Forest regarding delineation of critical fawning areas. We do not take issue with those depicted on the map. The Department of Fish and Game would be pleased to cooperate with the Tahoe Forest in a

field project to properly delineate fawning areas. Only through identification can these areas be properly considered in the land management and timber harvest management programs.

Draft Environmental Impact Statement

- xxvii Diversity - "Alternative E (Amenities) would have the greatest potential to produce late successional habitats." This would benefit one group of wildlife species. "Alternative I (Timber) would have the greatest potential to produce early successional habitats." This would be beneficial to a greater number of wildlife species; however intensive silvicultural practices would reduce the ability of the early successional habitat to provide species abundance and diversity.
- xxxi Riparian Areas - It is inconsistent that the so-called wildlife alternative would result in the greatest potential damage to SMZ's. If this is the result of increased timber harvest to improve habitat for early successional wildlife species then the "wildlife" alternative is not well

planned. Riparian zones in a natural state are beneficial to the greatest number of wildlife species of any habitat type. An alternative resulting in damage to riparian zones, let alone the "greatest" damage can by no means be considered a "wildlife" alternative.

Alternative A (Preferred)

- P. 2.43. Resource Program Direction. The "projected demand" for developed and dispersed recreation (including downhill skiing) should be documented and quantified in the DEIS. It is agreed that the least impact on the forest (including wildlife) would result from expansion of existing facilities rather than development of new facilities. In addition, any new facilities should be constructed in the vicinity of existing facilities where impacts have already occurred. A new facility could utilize the pre-existing infra-structure, thereby mitigating overall adverse impacts which could be substantial if additional facilities were constructed in a new area.

- P. 2.44. g. Range. If the existing and potential forage created by timber management practices (transitory range) is "fully" used, an average of 25% increase in deer numbers will **not** be attained unless a major proportion of the forage is allocated to deer (see p. 2.44 Fish and Wildlife).

h. Timber. If 'intensive' timber management practices and even-age silvicultural systems are employed - how will deer herd goals be attained?

- P. 2.46. The demand should be documented for new downhill skiing facilities and key potential developed recreation sites.

Transitory ranges, especially in plantations, provide nearly all the new transitory range created on the forest for deer. These areas provide key feeding and fawning habitat. **How** does "fully" utilizing (p. 2.44) these key habitats for livestock forage provide for a 25% increase in deer numbers? "Intensive range management" implies intensive use. Deer and other transitory range wildlife specres would suffer.

P. 2.62. Wildlife Alternative "The future condition of SMZ's would most likely be similar to the existing condition". This is inconsistent with the analysis of riparian areas (p. xxxl, DEIS) stating the wildlife alternative has the greatest potential for damage to SMZ's,

Existing downhill ski facilities would be expanded and new facilities developed only where no conflict exists with fish and wildlife management. This should be a part of each alternative. Important fish and wildlife habitat types and areas should be protected now and the LMP should set that direction.

P. 2.66. e. Fish and Wildlife The riparian protection zone in all alternatives should be at least 100 feet. Anything less is generally unsatisfactory. Riparian habitats are critical to the greatest number of wildlife species as well as critical in maintaining water quality. Timber harvest may be allowed on a case by case basis. End-lining individually selected trees can be accomplished with minimum disturbance to the riparian zone

P. 2.69. Alternative E (Amenities) is unsatisfactory in that it precludes reaching deer population goals established in individual deer herd management plans to which the Forest has previously agreed,

P. 2.75. Alternative F (Motorized) results in a net reduction in deer numbers, contrary to goals established in deer plans adapted by the State of California. This alternative also results in a reduction in gray squirrels, blue grouse, bear and pileated wood-peckers - clearly an unsatisfactory alternative in these respects.

P. 2.81. Alternative G (Non-motorized) also results in deer populations falling short of already established goals and is therefore unsatisfactory.

P. 2.84. Alternative H (Range/Timber) g. Range. Fully utilizing transitory range will adversely impact the ability to increase deer numbers as directed by deer herd plans. This alternative results in a substantial reduction in other indicator species as well as deer

P. 2.89. Alternative I (Timber) g. Range Again it is proposed to "fully" use the existing and potential transitory ranges as well as implement intensive grazing management practices. As a result, deer numbers will fall short of goals (actually no increase) while grazing increases. There should be an AUH allocation for deer in existing and potential transitory ranges.

Only in the Wildlife and Amenities alternatives is there anything short of "full" utilization and intensive management of transitory ranges. Full utilization by the range program will adversely affect opportunities to produce planned for numbers of deer.

P. 2.108. Fish and Wildlife Only alternatives A, C, D, and K would meet deer herd planning goals. In that respect all other alternatives are unsatisfactory. The Tahoe Forest was an active participant in developing the deer plan goals. Whatever alternative or combination of alternatives is chosen to direct management of the Tahoe Forest, achievement of deer population goals should receive high priority.

e. 2.109. Alternative D (wildlife) would have the highest output among the alternatives in WFUD's and also has the highest present net value and return to the Federal and local treasuries. (p. 2.107). The income to local treasuries should be documented.

P. 2.110. Range. Converting 12,556 acres of scattered eastside pine to intensive range management under alternatives A and K would be detrimental to achievement of deer plan goals.

P. 2.111. Developed Recreation Ski Areas Development of new downhill ski areas would assuredly be in conflict with maintenance of important wildlife habitat and should not be a part of a wildlife alternative. In the wildlife alternative, expansion of ski opportunities should be restricted to expansion of existing facilities operated during winter only rather than as a year-round destination resort, and that is the action the Department supports.

Alternatives E and G restricting expansion to areas outside late successional mature forest types would

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direct development to the most productive wildlife habitat, in terms of species diversity, an unsatisfactory direction.

P. 2.112. Riparian Areas. Again it is inconceivable that a wildlife alternative would result in the greatest potential to damage the most productive wildlife habitat and the aquatic ecosystem. Alternative D, wildlife, must be modified to result in reduced riparian hazard to truly be categorized as the wildlife alternative.

P. 2.117. Table 2.17. Assuming that 16,000 deer on the forest is the goal developed in the respective deer herd plans, achievement of a forest deer population 44% above the 1990 RPA goal in decade 5 under the wildlife alternative is not necessarily an advantage. Attaining these deer numbers is not realistic and its impact on other resources merely makes the wildlife alternative appear unreasonable. Clearly this aspect of the wildlife alternative needs to be rethought. More deer at the cost of other resources is not the Department's nor the Forest's objective.

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We would like to see the assumptions which explain why deer numbers increase 44% from decade 1 to decade 5, while deer WFUD's decrease 8%

We would also like to see an explanation why in the wildlife alternative deer WFUD's increase 55% from 1982 to the first decade when deer numbers increase only 44%

P. 2.140. We are pleased to see the Carmen Valley watershed is afforded special protection and is recognized as an area of extraordinary need in all alternatives.

P. 3.89. It would seem that the spotted owl would be better selected as a site-specific indicator species rather than forest-wide. Spotted owls will be managed in designated areas and analysis of spotted owl habitat will be site-specific not forest-wide.

with the great gray owl chosen as an indicator species, there will be problems in carrying out an analysis of the success or failure of providing its habitat needs. There is presently little information and nothing to measure in terms of suitable habitat for great grays. Its habitat should be provided for; however another indicator species should be chosen or direct measurement of the habitat

should be made. Indicator species should be numerous enough on the forest (or site specific for those indicator species) to measure and determine with some sensitivity the success of indicated management direction.

P. 4.40. Land. A land acquisition program to acquire or trade for critical wildlife habitat should be incorporated into, each alternative. No matter what alternative is eventually implemented, a program to acquire and preserve developable deer winter ranges, migration corridors, key fawning habitat and other important habitats should be implemented

P 4.45. Alternative A. It would appear that the range program would be adverse to attaining deer and other wildlife goals. An increase in transitory range will result in an increase in the degree of conflict and intensity of the range program. Additionally, 12,556 acres of eastside pine would come under grazing. It is doubtful that deer goals can be achieved with the projected level of the grazing program under this, the preferred alternative.

e. 4.54-

4.55. It is agreed that increased demand for downhill ski facilities should expand within their existing boundaries for at least the first decade. Additional demand should be met by expanding those boundaries where an existing infrastructure can minimize the impacts on NFS land. It appears contradictory that the wildlife alternative results in an increase of over 1,000% of land allocation to downhill skiing. Emphasizing mass transit (portrayed as a negative attribute) should be given more than peripheral consideration in order to meet demand at existing facilities. A federal agency (USFS) should take the lead in promoting energy efficiency rather than promoting and fostering energy inefficiency.

e. 4.72. Why does the wildlife alternative result in the greatest potential to damage SMZ's and the aquatic ecosystem? If this is true it does not merit the title of a "wildlife" alternative. Riparian areas are the most productive wildlife habitats and a wildlife alternative should protect those areas.

- P. 4.91 Vegetative Types. It is inconsistent that the wildlife alternative results in the least amount of the mixed hardwood-conifer vegetative type being retained. The hardwood/conifer vegetative type is a high value wildlife habitat.
- P. 4.115. Alternative B (current) portrays the existing budget and personnel constraints to rationalize the strong likelihood that deer goals will not be met. No such constraints are mentioned relative to alternatives A (preferred) and R (preferred with departure). Budget and personnel constraints are a fact of life and this should be honestly portrayed in the preferred alternative - not ignored to make it look better.
- P. 4.116. Deer objectives under the wildlife alternative (D) far exceed the goals set forth in deer herd management plans. Exceeding this goal is meaningless and unnecessary and results in the wildlife alternative which appears unreasonable when compared to other alternatives.
- P. 4.117. Alternatives E, F, G, H, I, and J are unacceptable in that they do not allow achievement of deer and Other wildlife goals. They each favor a segment of the wildlife resource to the detriment of many other species.

Memorandum

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Honorable Gordon R. Van Vleck
Secretary for Resources

Date May 15, 1986

Attention: Gordon F. Snow, Projects Coordinator

Department of Fish and Game

Tahoe National Forest Plan, (SCH 86010601)

The Department of Fish and Game has reviewed the Proposed Tahoe National Forest Land and Resource Management Plan. Our review indicates several significant concerns that we believe will seriously hinder attainment of the Plan's wildlife goals and objectives.

We are concerned that intense post-harvest silvicultural practices will severely curtail anticipated browse production in clearcut areas and that commodity production, particularly timber management, has been over-emphasized at the expense of fish and wildlife and other public values.

Use of transitory forage anticipated in clearcut areas appears to be dominated by intensive range allocations. Increased use by deer of transitory range is presumed but not allotted.

Overall the Forest Plan is deficient in maintaining hardwoods. Regeneration cuts in many of the conifer areas, converting present mixed conifer-hardwood stands to conifer, and retention of only 10% of the forest's hardwood-conifer stands will lead to a significant and serious reduction in the forest's hardwood resource and associated wildlife species.

Forestwide Standards and Guidelines for wildlife do not provide adequate assurances that wildlife resources will be fairly represented. Although many of the Forestwide Practices provide commendable wildlife resource measures, their implementation is not assured in any selected Management Area. According to the Forest Plan the Standards and Guidelines take precedence over the Forestwide Practices in any resource conflict situation. Standards and Guidelines, therefore, are the means to provide long-term sustained or improved wildlife values on the Tahoe National Forest. Forest Practices, because of their subordinate role, are inadequate. Both the standards and Guidelines and the Forest Practices should be amended to adequately address important wildlife resource issues and assure sustained or improved wildlife values forestwide.

Many Management Areas are deficient in clearly identifying significant wildlife values. "Concerns" and "Opportunities for wildlife" are often not adequately addressed in the "Resources Management Emphasis" and "Proposed Resolution of Issues and Concerns" sections. Deer or other featured species should be an "Issue" in Management Areas containing important habitat components because of the potential conflicts with other resource objectives. "Issues" carry greater emphasis in the decision-making process.

The cumulative result of our concerns leads the Department of Fish and Game to conclude that the Proposed Plan inadequately addresses the wildlife resources on the Tahoe National Forest. We believe the Plan's Goals and Objectives for wildlife are overly optimistic and unattainable considering the objectives and goals of competing resources such as range and timber and the Plan's inadequate assurance of maintenance and, where possible, improvement of wildlife resources.

In general, we believe that too much of the Forest has been allocated to even-aged timber management, especially short-rotation pine plantations, and that proposed clearcut patches of 10 to 40 acres are larger than desirable. We would prefer that most clearcuts be limited in size to 2 to 5 acres. This would reduce the hydrological impacts of accelerated runoff and resultant erosion and siltation, and increase the amount of edge habitat available for wildlife.

Detailed comments are on the following pages. For a discussion of these comments, please contact Patricia Perkins, wildlife Management Supervisor, Region 2, 1701 Nimbus Road, Rancho Cordova, CA 95670 or telephone her at (916) 355-0922. For further information on species and habitats of concern, please contact Stephen J. Nicola, Natural Heritage Section, 1416 Ninth Street, Sacramento, CA 95814 or telephone him at (916) 322-2493.

Jack C. Parnell
Jack C. Parnell
Director

Attachments: Detailed comments

specific Comments (Part 3 of 3 Parts)

NATURAL HERITAGE SECTION/ENDANGERED SPECIES

1. DIVERSITY

Since the maintenance of natural diversity, especially where it concerns the species most in danger of extirpation, is an important mission of the Department, we have devoted a good deal of time and effort to analyzing the treatment of this subject.

Before discussing the substance of these comments, two important points should be emphasized. First, the Natural Diversity Data Base (NDDB), which the Department has assembled over the past 5 years, contains much of the scientific information upon which we are basing our comments regarding natural diversity. We urge you to make use of it in preparing the final documents. The staff of the NDDB would also appreciate receiving copies of rare plant and animal survey reports, forms, and other documentation.

Second, the Department believes that for the Forest to comply adequately with the letter and intent of the National Forest Management Act of 1916, and in particular Section 1604 (g)(3)(b), the Forest Plan must demonstrate the ability and intention of the Forest service to manage and preserve all of the rare species presently found in the Forest. Absent proper management, these species are the most likely to be adversely affected by human activities.

As a rule, the conservation and monitoring of "management indicator species" and other management tools employed in the development of the Plan may help to deal with rare species, but only in part. In point of fact, the indicator species chosen in the Tahoe Plan do not adequately represent all rare animal species and most certainly do not represent all rare plants. All rare species must be accounted for in the Plan in a straightforward and positive manner. To do this, the Department recommends that the Plan address at least all species that are known to exist in the Forest that are T & E (i.e., listed as rare, threatened, or endangered by the Federal Government or the State of California), are T & E candidate species, are listed as sensitive by the Regional Forester, or are de facto rare species. By "address" we mean that specific quantified objectives designed to achieve viable populations of these species should be set forth in the Plan in accordance with FS Manual 2672.31 and 2672.32.

furthermore, specific means for attaining these objectives, including the dedication of Research Natural Areas and Special Interest Areas, should be described. It is not sufficient to address the diversity issue merely by formulating plans to retain a certain percentage of the Forest in each major vegetation type and seral stage. Unfortunately, the Plan fails to do this since the MMRs (see DEIS page 2.241) only require maintenance of 5% of each major vegetation type in various seral stages that presently exist in the Forest. At the least, the direction should contain a minimum percentage of the total forest acreage that will be maintained in each vegetative type and seral stage, what those types and stages are (giving special attention to uncommon types and stages), and direction regarding how to actively manage the Forest to attain these objectives.

Our remaining comments elaborate on how the Plan and DEIS should be improved to more adequately address diversity through rare species management.

2. ANIMALS

In this section of comments, we are concerned primarily with Forest Management Direction and other management requirements as they pertain to rare animals. Many of these requirements are described in Chapter V of the Plan, a portion of which is designed to describe fish and wildlife goals and objectives and Forestwide standards and guidelines. The major deficiency of this most critical chapter is its specificity and comprehensibility. This is especially true for the standards and guidelines since they will ultimately determine if the goal; are achieved. These comments are explained in greater detail below.

Goals and objectives. Regarding the Plan's stated goals listed on page V.2, Goal t14 pertains in part to listed threatened and endangered species. This goal should contain a provision which demonstrates the Forest's commitment to identifying critical habitat of Threatened and Endangered (T & E species) (see DEIS, page 3.87 for the admission that critical habitat has not been identified), and to development of specific measures to prevent destruction or adverse modification of such habitat as required in CFR section 219.19 (7). Further, there are no species-specific objectives described on page V.5, despite the requirements of the above-cited CFR Section and FS Manual 2612.32. The Plan should describe clearly the quantified objectives for all T & E, candidate, sensitive, and de facto rare species of animals (and plants) that exist in the Forest, or describe the manner in which they will be developed. Moreover, to make any sense

to those Interpreting the Plan, such objectives should be described in the Plan in relation to the goals and standards and guidelines. Finally, goals and objectives should also be integrated into the description of the "Theme" for the preferred alternative found on page 2.43 of the EIS, rather than a vague reference to an emphasis on fish and wildlife habitat.

Standards and Guidelines On pages V.29 and V.30 Of the Plan, standards and guidelines are presented that relate to 'Endangered, Threatened and Sensitive Species management.' two comments should be considered. First, although the guidelines are described in narrative form, standards are represented by a code. Since the standards are key elements of the Plan (i.e., they "require a specific level of attainment"--see page V.20), it is vital that they are immediately available to the reader to review and judge for adequacy. They should not be hidden in some obscure administrative document. We recommend that standards under the code number CG1a are repeated verbatim.

Second, except for peregrine falcon (Falco peregrinus) guidelines, it appears that each of the guidelines that relate to rare species pertain solely to areas (i.e., probably management areas) in which the species "are featured." The Plan fails to indicate if this is in fact the case. This should be made clear. But more importantly, there is no specific identification of those management areas in which particular species are "featured." If, as is probably the case, the intention is to feature indicator species in those management areas where they presently exist, then this should be explained in unequivocal terms.

Species-specific standards and guidelines should include, but not be limited to, means to ensure that (1) spotted owl (Strix occidentalis) territories are managed and protected in the particular manner prescribed by the regional guidelines. and the guidelines themselves should be reiterated; (2) an area of at least 125 acres (as opposed to 50 acres indicated on page v-30 of the Plan) of suitable habitat surrounding a northern goshawk nest stand is delineated in accordance with the results of the 1985 DFG/FS cooperative goshawk study; and (3) the provisions of the "Pacific coast Recovery Plan for the American Peregrine Falcon" and the (draft) "Pacific Bald Eagle Recovery Plan" as they relate to the Tahoe NF are repeated verbatim (see Plan, page V.29).

Management Areas. On pages V 75 and V.313, the Plan provides direction for 109 Management Areas, in which certain management practices and policies will apply. The

Department recommends that (1) specific management areas for critical habitat of T 6 E, candidate, sensitive, and de facto rare species (including for example, prescriptions for spotted owls, northern goshawks, and peregrine falcons) should be described; (2) particular species-specific management practices should be devised to treat such areas; (3) additional management direction should be described for management areas when an area designation is inappropriate (i.e. an area is too small, etc.) but habitat of the rare or sensitive species is known or believed to exist.

Indicator Species On pages 3.88 through 3.91, the DEIS discusses "management indicator species," identifies the species chosen for management emphasis and monitoring, and reveals that they are grouped into two categories--Forestwide and site specific indicator species. Three comments are in order. First, the list of species chosen as MIS should include rare plants in addition to animals (see below section 3 of these comments pertaining to plants). Second, on page 3 88, the DEIS indicates that "monitoring standards for site specific indicators will be developed on a localized case-by-case basis." Since monitoring is one of the most important functions of MIS, the Department recommends that monitoring standards be developed for all site-specific indicators--not only for the three that are federally-listed as endangered or threatened. Third, since the NFMA regulations specifically require that habitat for each management indicator species is maintained and enhanced, the Plan should clearly indicate how this will occur for each species. The Department feels that the incidental effect of management actions aimed at other species or resources is insufficient to meet this legal requirement; the Plan should demonstrate an affirmative approach to the maintenance and enhancement of habitat of each species, but especially those that are rare (many of the site-specific indicator species).

viability. CFR Section 219.19 states:

Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired nonnative vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area .. (emphasis added) In order to manage habitat to maintain viable populations, the above-quoted regulation very clearly indicates that specific quantities of reproductive individuals must be distributed in a manner appropriate to insure the continued existence of each

taxon. For species in which viability is a concern (i.e., all T & E, candidate, sensitive, and de facto rare species), neither the Plan nor the DEIS describe exactly what a viable population is considered to be in terms of estimated numbers and distribution of reproductive individuals. In no case is there a description provided of how viable population levels are actually calculated or the assumptions, probabilities, and risks associated with that level. The Plan should contain such information.

Surveying and Monitoring. The Plan fails to detail surveys will be conducted to determine population status and trends despite the fact that Table 3.33 of the DEIS reveals that... all of this information is unknown for endangered and sensitive MIS. The Department recommends that this issue is addressed for these species

With respect to monitoring, CFR Section 219.19(a)(6) states:

Population trends of the management indicator species will be monitored and relationships to habitat changes determined... (emphasis added)

In response to this regulation, the Plan, on page VI. 11, describes two "effects to be monitored": population trends for MIS and sensitive species, and population trends of T & E species. Regarding the former, the Plan only provides for monitoring of habitat capability, while in the latter case, direct counts will be conducted on established sample plots. To comply with the provisions of CFR section 219.19(a)(6), the Department suggests that monitoring habitat capability (however that may occur) is insufficient to detect crucial changes on population trends of rare species. Therefore, it is recommended that sensitive species (that are MIS) should be specifically named and monitored in the same fashion as T & E species, i.e., by conducting direct counts on established sample plots

Individual Species Comments with respect to spotted owls, on page 4.115, the DEIS states that pairs would increase by 20% to 30%. This is based on the assumption that there are currently 30-40 pairs in the Forest (see page 11.16 of the Plan). The Department believes that the current population consists of at least 64 pairs and probably as many as 100. Thus, if the population is permitted to average after 50 years between 49 and 52, as suggested in Table 4.38 of the DEIS, the existing population will experience a significant decrease and its viability will decline. The Department recommends that the present population estimate should be revised. Then, in addition, the other contents of the planning documents based

upon that estimate should also be recalculated. Similarly, Goal #9 found on page v.2 of the Plan indicates that: habitat for indicator species will be maintained and improved. Since the spotted owl is an indicator species, unless the population estimate is revised upward, a decline to 40 or 50 pairs will appear as to fulfill this goal, while in reality the population is declining.

With respect to the willow flycatcher (Empidonax traillii), the area between Webber Lake and Highway 89 along the Little Truckee River represents one of the densest and best habitats in the state. This area should be given a special management area designation that contains restrictions on grazing and provisions to seek Forest land ownership consolidation (especially at the two large meadow systems at Webber Lake and Perazzo Meadows). Additionally, prime willow flycatcher habitat is located at the upper end of Independence Lake, southwest of Mount Lola. Forest land ownership consolidation (exchanging prime willow flycatcher habitat on private inholdings for less important Forest lands) should also be sought here.

With respect to Lahontan cutthroat trout (Salmo clarki henshawi), National Forest land containing the headwaters of Independence Creek (Section 8) is critical to the maintenance of a viable population of this taxon. Section 8 possesses all of the spawning and nursery habitat for the Lahontan cutthroat trout (hereafter LCT) population residing in Independence Lake. This population represents the only self-sustaining, nonintegrated, endemic lacustrine stock remaining in California and the only verified example of the Truckee River system race of LCT in existence. Yet, the prescription for the Castle Management Area permits winter sports development (AF1b) and timber management including clearcutting and other intensive management (EC1c, EC2s, EC3o). It also suggests that the White Rock Allotment may be reopened for cattle and sheep grazing. All of these activities would be incompatible with maintaining a viable population of LCT. For the Independence Creek watershed, these management practices should be prohibited. A resource management emphasis should be established for LCT, and private land acquisition should be vigorously pursued to preserve and protect LCT habitat. Management area standards and guidelines for the Independence Creek watershed should be adopted to prevent adverse cumulative disturbances. These standards should permit no more than 25% of a unit watershed (200 acres or larger) to be disturbed (i.e., less than 50% effective groundcover existing) at any one time.

On page 3.87, the DEIS states that there are "no threatened animal species" on the Forest. This is incorrect--LCT are federally-designated threatened species

3. PLANTS

On page 3 61 of the DEIS, Table 3.21 indicates that there are seven endangered or sensitive species that OCCUR on the TNF. Records of the NDDB show that four other rare plants occur or are highly suspected of Occurring on the Forest. Lewisia cantelowii, Ivesia aperta, Ivesia sericoleuca, and Ivesia webberi. The NDDB has detailed information on these species and their locations which will be provided to you upon request.

Despite the repeated assertions throughout the planning documents that sensitive plants are to be managed to ensure that they do not become threatened or endangered due to FS activities. there are no specific indications of the intent to complete the Forest inventory and survey of such species to determine their status, trend, and locations. The Plan should provide for the completion of such inventories and surveys.

On page 3 89 of the DEIS, Table 3.31 lists the management indicator species selected for the TNF. This list contains no threatened, endangered, or sensitive plant species. The Department recommends that all such species are designated as MIS.

On page 2 25, the DEIS lists two "Minimum Implementation Requirements." including one which relates to sensitive plants. At a minimum, the following MIRS for sensitive plants should be adopted in the Plan:

1. sensitive plant species, although not subject to the provisions of the Endangered Species Act, will receive special management to prevent their placement on federal lists as discussed in FS manual 2670.3.
2. The Forest will develop species management guides for sensitive plants. These guides will function as "recovery plans." defining activity constraints in essential habitat, and the need for monitoring land allocation and habitat manipulation.
3. The Forest inventory of sensitive plants will be completed before the next round of Forest planning.

On page 3 60, the DEIS discusses the current circumstances surrounding rare plants. The Department recommends that, to supplement this rather cursory treatment of the subject, the section discusses the relative rarity of the taxa, where they are known to occur, and the threats or lack of threats on these populations which result from management activities that are currently permitted on the lands they occupy. Further, the DEIS should indicate in Chapter 4, especially page 4 72,

how these situations are expected to change as a result of the implementation of the proposed alternative.

4. COMMUNITIES

On page 3.58, the DEIS states "It is questionable whether SMZs can be protected adjacent to intermittent and ephemeral streams on steeper (cable-loggable) ground, mainly due to post-harvest activities, notably broadcast burning." To not protect such SMZs is contrary to national policy. That policy establishes priority for riparian-dependent resources in cases of conflict with other uses. The Plan and DEIS should make provisions to modify postharvest activities in these areas to protect SMZs or eliminate logging in such areas.

With respect to RNA6 and SIAs, a number of comments are appropriate. First, although the Appendix Volume contains an analysis of all proposed RNAs and SIAs, there is no explanation of what ultimately led to either the acceptance or rejection of each individual candidate area for Classification as an RNA or SIA. This omission should be rectified.

Second, the Department recommends that the list of RNAs and SIAs selected for classification (see pages 2.43 and 2.44 of the DEIS) in the Preferred Alternative is modified as follows: For RNAs, the Department recommends that the area known as the "Headwaters Basin of the North Fork of the American River," placed in the further study category to determine exact boundaries, is classified upon completion of that task and is given a management area prescription that will preserve its biological attributes while the study and classification process is underway. This area (or part of it) qualifies as an RNA according to FS standards and is significant biologically because it contains occurrences of, among other things, three uncommon animal species tracked by the NDDB (Cooper's hawk, yellow warbler, and northern goshawk) and three rare plant taxa tracked by the NDDB (Eriogonum umbellatum var. torreyanum, Mahonia sonnei, and Silene invisa).

For SIAs, the Department recommends that the areas known as Sagehen Basin Mason Fen and Independence Lake are classified, respectively, as an SIA/Botanical and an SIA/Zoological Area. Sagehen Basin Mason Fen is significant since, first, it is the site of numerous fisheries studies that have been conducted over the past 35 years; any modification to the watershed would seriously jeopardize the ongoing validity of such studies. Further, NDDB records indicate that there is at least one occurrence of four rare plants, one animal, and two natural communities currently being tracked: five occurrences of Silene invisa (a federal Candidate 2 plant species), one

11320

occurrence of "Lahontan mountain ephemeral pool" (an uncommon and declining natural community), one occurrence of the northern goshawk, and one occurrence of a fen (a rare and threatened natural community).

The Independence Lake area, especially the headwaters of Independence Creek, is extremely important because it represents the last remaining viable LCT lake. Such a rare aquatic community should, ideally, be protected as an aquatic RNA, but until such a classification can be considered, SIA designation *can* suffice. In addition to the Lake, the protective designation should include the Independence Creek watershed upstream from the Lake. In any case, it is vital to protect the area and its population of LCT under whatever land designation is applied. This protection should include the exclusion of livestock grazing in the Independence creek watershed upstream from Independence Lake and either acquisition of the private land in this area or the development of a carefully worded management agreement to protect this endangered genetic resource.

In conclusion, the Department recognizes that the Tahoe NF has expended a great deal of effort in the preparation of these draft planning documents. While this is laudable, we feel the natural diversity issue, especially the treatment of rare plants and animals, and natural communities, require considerably more attention than it has received before even the minimum legal requirements will be satisfied. The Department stands ready to assist the rest in reviewing our concerns in response to the comments listed above.

STATE OF CALIFORNIA
STATE LANDS COMMISSION

WINNETH CORY, Controller
PAT McCARTHY, Lieutenant Governor
SER HUFF, Director of Finance

STATE OF CALIFORNIA
JUN 3 1986

GEORGE DEUKMEJIAN Governor

EXECUTIVE OFFICE
1807 13th Street
Sacramento California 95814
CLAIRE T DEDRICK
Executive Officer

11, 3/9

11, 3/9

-2-

June 2, 1986

June 2, 1986

Forest Supervisor
Tahoe National Forest
Land Management Planning
Highway 49 & Coyote Street
Nevada City, CA 95959

Re: Tahoe National Forest Plan

Dear Sirs:

The purpose of this letter is to briefly comment on the proposed Tahoe National Forest Plan (Plan).

Resources management practices under each of the alternatives will impact California sovereign lands which are adjacent or near the Tahoe National Forest. California sovereign land; include navigable bodies of waters including but not limited to Donner Lake, Independence Lake, the American River, the Yuba River, the Truckee River and the Feather River.

As you no doubt are aware, California navigable Waters are subject to a public trust and easement. (see People ex rel., Baker v. Mack 19 Cal.App.3d 1040 (1971). National Audubon Society v. Superior Court 33 Cal.3d 419 (1983) and State of California v. Superior court (Fogerty) 29 Cal.3d 240 (1981). California's public trust and easement are designed to protect the rights to the public, as well as the rights of riparian owners, to such waters and related watersheds. California also has some proprietary lands and school lands which may be affected by the Plan. The California State Lands Commission has an obligation to effectively manage these resources.

We are particularly concerned about the potential impacts on the lake and stream environment zones and related water-sheds. In many circumstances a buffer zone may need to be established along streams and lakes. Logging and the use of herbicides should be closely reviewed within these buffer Zones. Further study is needed to establish the exact width of each buffer zone. When required, buffer zones are essential to maintain the environment, quality and recreational utility of California's waters for future generations.

Finally, regardless of the alternative ultimately adopted, we request that notice of all program and project level applications be sent directly to our office in sufficient time to allow further site specific Comments. We will reserve any additional comments until a proposal is made for the utilization of specific Tahoe National Forest lands.

Please contact our office if you have any questions or comments concerning the position of the State Lands Commission. Thank you for your consideration.

Sincerely,

JAMES F. TROUT
Assistant Executive Officer

FINAL Filing
JUN 2 1986

COUNTY OF NEVADA

STATE OF CALIFORNIA

BOARD OF SUPERVISORS

Todd J. Juvinali, 1st District
Joel F. Gustafson, 2nd District
Karsten Hansen, 3rd District
Eric W. Road, 4th District
Crawford Bost, 5th District



675

Cathy R. Thompson
Clerk of the Board

301 Church Street
NEVADA CITY, CALIFORNIA 95959
Phone Area Code 916-265-1450

June 2, 1986

Geri Larson, Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, California 95959

Subject: Tahoe National Forest and Resource Management Plan and Draft Environmental Statement

Dear Ms. Larson:

This letter is in response to your request for comment on the subject plan and associated EIS. The Nevada County Board of Supervisors has reviewed the plan and appreciates the opportunity to comment.

We had tentatively supported (4-1) with modifications, the land use allocation in Alternative (I); however, further examination of the Alternatives in detail led us to conclude that it would be wrong to limit our support to any one Alternative because of the numerous modifications that seemed appropriate. We have chosen rather to list certain principles and objectives which we hope you will consider and incorporate in your ultimate decision.

At the outset we support the proposal that has the largest acreage in multiple use which will benefit the greatest number of people in our community and State as in Alternative (I). Also, the recreation objectives and acreages in Alternative (A) should be included in the land use plan, making land available for future recreation sites, ski area sites, reservoir management areas and winter management areas. We urgently request that the plan in its final form be flexible and able to react to a wide variety of future problems and/or opportunities.

A great deal has been said about clear-cutting and the word has taken on a special meaning for many people. We do not support extensive bare land clear-cutting as the overriding management practice.

a) On the special cutting acres we support individual tree selection harvesting.

Geri Larson
June 2, 1986
Page 2.

8675

b) In the acres in long-term rotation a combination of uneven-aged selection and group selection methods should be practiced with no opening larger than five acres. The majority of this acreage is in scenic corridors, and should be managed for visual enhancement.

c) The remaining acres should use short-term uneven-aged management on approximately 50 percent of the land base and short-term even-aged management on the other 50 percent. Where visual quality objectives of retention or partial retention are to be met, uneven-aged selection and group selection can be used. Also, under steep ground conditions, this method will cut back on potential erosion problems. Uneven-aged group selection should also be used in the high elevation Red Fir stands due to regeneration problems. The remaining mixed conifer areas we recommend to be managed under even-aged management, by shelterwood, seed tree, and by leaving advanced regeneration wherever possible. The acreage of these blocks should be less than twenty acres.

In general, we suggest the 20 cubic feet per year per acre criteria should not be used to manage marginal areas. The more intensive management practices should only be used on those areas which have proven to be highly productive.

We make no recommendation as to the volume of timber cut per year. We understand the 10-year average has been about 147 million board feet produced per year. Two and three years ago it was only 133 and 134 million board feet. Ye, the Board of Supervisors, do not wish to introduce an additional bureaucratic hurdle in controlling amounts harvested. We believe socio-economic factors and the Forest Service budget should determine the allowable production. Ecologically, the most stable environment is one with the greatest number of species in it. Our Sierran forests seem to be managed for two or sometimes three species of conifers and reduction or elimination of other species. We request a further study of management for conifers exclusively.

Tourism is one of the biggest industries in our county and it is important to the tourists that they see what looks like a forest when they come into the Sierra Nevada. Tourists engage in looking, hiking, camping, swimming, fishing, skiing and a host of other physically active sports. They also attend a wide variety of events, staged for their enjoyment and entertainment. They want all of this in a mountain/forest setting.

The lumber industry is one of the biggest industries in our county and of significant economic importance to the county and we strongly support its role in our economy.

Over the years we have come to have a great respect for our counterparts in the Forest Service and their expertise. We believe we must rely on this expertise as modified by socio-economic considerations and realistically, political considerations as well. We believe it is particularly important that the Forest Service continue and expand their educational activities

Geri B Larson
June 2, 1986
Page 3.

8675

pointed towards better citizen understanding of the very complex problems inherent in the growing, marketing, **recreation** and other aspects of forest management. **It is** essential that the public be well informed on this subject **since it** is uniquely sensitive to **political** considerations.

The question of herbicides is specifically not addressed since herbicide control will not be utilized pending a decision of a case in several northwest states.

We also specifically recommend that the report of the Nevada County Resource Conservation District and the Citizens Alternative concept both be evaluated and considered along with the other previously distributed alternatives and utilize the same format. Additionally, we invite your attention to a Memorandum addressed to the Honorable Gordon X Van Vleck, Secretary for Resources, on this **subject** from the California Department of Fish and Game dated May 15, 1986, which draws critical attention to the impact on fish and game.

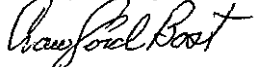
We are aware of the special situation of the Forest Service with respect to funding. We support the budget requests of the Forest Service in all of its categories, but suggest that the categories of research needs, recreation and **forage/range** management be increased.

We ask the Forest Service to assemble those elements presented in previous and requested studies and to **so** manage the multiple uses **of** the forest that we can still be proud of our country, and maintain a healthy economic climate. We believe a reasonable balance can be struck between the various points of view.

As evidenced by the attendance at your public hearings and the many comments carried in the newspapers, our citizens are deeply concerned on this issue. **Accordingly**, we sincerely appreciate the opportunity to comment on the "Plan".

We look forward to commenting on the "Plan" as finally released, which we understand is expected in some 10 or 11 months.

Respectively,


CRAWFORD BOST
Chairman of the Board

ER mm

11082 25. Crawford Bost

Yes. Crawford Bost, Chairman of the Board of Supervisors, Nevada County. I support Alternate I with some modifications which you will be receiving in the mail shortly. Our Board voted today on a 4-1 vote a Motion of Intent to support Alternate I. You will be receiving this in the mail and also will be receiving notification, or testimony, from some of the other Supervisors in Nevada County in your meeting down in Western Nevada County. I feel the plan has some overall problems in some areas. One is, and I am talking the overall plan basically, number 1 -- the Kennedy Meadows Area, which is located just north of here, is planned for some campgrounds and other things in that area. It is a deer fawning area. I think we have to look at some more areas in our fish and wildlife, especially for our deer herds where the fawning areas are. We shouldn't have campgrounds or a lot of roads running through those areas that are accessible to the public off-road vehicles and such. The reason my support for the Alternative I is

because I support less clearcutting. I feel that Alternative I with the extra land available, it will not be necessary to clearcut as much acreage as it would through some of the other plans. I also feel that it is going to give multiple use to more people. I think it's necessary to have more roads in Tahoe National Forest, but I think one of the things that we should lock off a great number of those roads. As it's done up in the area now, as you go up to the road to Graniteville and back in that area -- I think they should be used for harvest, fire fighting, and timber management. There are some of these areas where you go down towards the Middle Fork of the Yuba, and I'm talking Nevada County areas that I'm familiar with, that, number one the steepness of the areas, extra traffic will cause erosion on the roads; and I don't think we want the people to be able to access many of these areas that easily. I worry about fire; I worry about growing of illegal drugs in some of these areas that will be more easily accessible, to get back into; and I also have some concern about deer poaching, which we have a tremendous amount of in the Tahoe National Forest up in that area. The unique thing I think about Tahoe National Forest is where great amounts of it are every other section. And one of the reasons, again that I support Alternate I, I don't want to see every other section other than Tahoe National Forest clearcut. I think Tahoe National Forest and the other forests in the State of California need to get into their seeding and planting program sooner than they have been; I think we should be able to get our pine cones with the seeds from the area and get them a couple of years before an area is harvested so they could be put in within a couple of years after its harvested. I know of areas that are almost six years right now, and have not been reforested. I feel that a couple of other areas that . . . where we have small areas of timber there will be very old growth timber, they will be very

difficult to access into it, that timber. . . and costly to run the roads in . . . those old stands should be left. There are some areas in the higher country where it's quite rocky that you can come back in and there's some pretty nice stands of limber, but just the cost of putting the road in is gonna to cost a heck of a lot more than the timber that will ever be produced out of those areas. Thank you. That's about all. . . does anybody have any questions?



COUNTY OF PLACER

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ROBERT P. MAHAN
DINING 1
THERESA "TAM" COOK
DINING 1
ALEX FERREIRA
DINING 2
MICHAEL LEE
DINING 4
ERIK HENNINGSON
DINING 3

OFFICE OF
BOARD OF SUPERVISORS

175 FULWELLEN AVENUE, SUITE 206 / AUBURN, CALIFORNIA 95603 / TELEPHONE (916) 235-4641

TAHOE FOREST MANAGEMENT PLAN

My name is Terry Cook and I am here representing the Placer County Board of Supervisors. I am also a member of the County Supervisor's Association of California (CSAC) Timber Receipts Steering Committee.

Our Board has reviewed the Tahoe National Forest Land Resource Management Plan and Draft Environmental Impact Statement. We conducted two public meetings where the Plan was discussed and comments were received from interested parties. I am here to provide you with the position taken by the majority of our Board on the proposed Plan.

Before I do, however, I would like to take a moment to commend Gary Larson and the Tahoe National Forest staff for producing such a highly professional and comprehensive product. Public hearings such as this one are reflective of the desire by the Forest Service to obtain as much public input as possible before arriving at what will be a very important decision.

The Placer County Board of Supervisor would like to make the following comments on the Management Plan and Draft EIS:

1. We support the land allocation in Alternative I. It is our belief that a broad base is needed to allow the best management practices throughout the forest. We do not support extensive clear cutting as a management practice. It is our recommendation that alternative approaches be considered which would encourage less clear cutting, such as seedtree and/or shelterwood systems or if clear cutting is used, keep the area harvested to smaller sized blocks of not larger than 5 acres. Impacts upon the County road network serving the Tahoe National Forest apparently have not been discussed in the USFS documents. Increased timber production can be expected to increase heavy truck traffic. This could reduce the practical lifetime of the roads within the network, change the design criteria for new or reconstructed roads, and increase the cost of both new road construction and maintenance. This is especially significant
2. Traffic impacts resulting from additional ski area development have not been considered. The County has no control over ski area development on USFS lands. We're beginning to manage successfully the major traffic problems created by such areas, but there are limits to what can be developed without jeopardizing public safety and convenience. No coordinating with the County are discussed. In addition, the USFS has a policy to encourage redevelopment or expansion of existing ski areas instead of developing new ones. The "preferred alternative", would provide for unlimited Crest south of Donner Summit.
3. Soil erosion from timber harvest activity and, particularly, roads is a major problem. We are budgeting \$1,416,000+ for fiscal year 1986/87 to correct erosion control problems in Placer County. Some of this expenditure is to correct erosion along USFS haul routes. Increased roading activities - particularly in areas with steep terrain, (and often with marginal timber) - create environmental and fiscal impacts that are not counted in superficial "benefit-cost" analyses. Clear-cut harvesting - particularly, of large areas - increases erosion. Reducing the size of clear-cut areas or harvesting using different methods can reduce erosion and the costs of erosion control. The buzz phrase "best management practices" is invoked to dismiss concerns about soil erosion. Such measures are, at best, partly effective and mostly work to stop eroded soil from being deposited in streams rather than preventing erosion. Much can be done to reduce this very serious problem at this stage when harvesting methods, roading policies, etc. are determined.

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TAHOE FOREST MGMT. PLAN
PAGE 3

4. within several roadless areas (including the Granite Chief Wilderness Areal there are private inholdings. Difficulty and expense of constructing access along with timber stands of little or marginal value are often the reasons why the areas are still unroaded. Rather than building expensive roads through difficult terrain (where erosion potential is often extremely high) to serve marginal public or private timber stands, opportunities for exchange or acquisition of these private inholdings should be explored. Where the USFS once actively worked on such exchanges [with southern Pacific, American Forest Products, and others), these planning documents make it appear that the USFS is not actively using this approach. In particular, exchanges in the Squaw Valley area could better define and consolidate both USFS holdings in the Granite Chief Wilderness Area and the private ski area. Similarly, exchanges in the Diamond Crossing area would eliminate the cost and environmental impacts of a major new road as well as consolidate USFS loads.

Thank you for the opportunity to comment. We look forward to continued cooperation and communication between the County and the Forest service.

THERESA A COOK, SUPERVISOR
PLACER COUNTY



COUNTY OF PLACER

BOARD MEMBERS

ROBERT P. MAHAN
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DANIEL B. COOK

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ERIK HENRIKSON
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175 FULWELLER AVENUE, RM. 200 / AUBURN, CALIFORNIA 95603 / TELEPHONE (916) 823-4641

BOARD OF SUPERVISORS

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5/25												
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May 27, 1986

Zane G. Smith
Regional Forester, Pacific SW Region
630 Sansome Street
San Francisco, California 94111

Dear Mr. Smith:

Subject: Draft Management Plan for the Tahoe National Forest

I am writing this letter to clarify Placer County's position concerning the subject plan. Although the Board of Supervisors voted to support Alternative I of the Timber Management Plan, as a minority opinion I would like to clarify a few points.

The Board was unanimous on how the timber receipt taxes are to be spent, in that we support the continuance of the status quo. We want to continue to receive 25% of the gross receipts of the timber tax sales

The decision concerning the Draft Management Plan was a split vote in favor of Alternative I. Supervisor Mike Lee supported the staff recommendation of Alternative A, with minor modifications. I supported an even more conservative position than Alternative A. I feel very strongly about this - considering the management plan affects my district in Placer County more than all the rest

Much of the timber to be harvested in the Tahoe Forest, particularly in the higher elevations, is considered "old growth". These trees are of great value to our heritage and should be protected from cutting or other management practices which are not sensitive to aesthetic values. I believe timber harvesting should be an important part of the Forest Management Plan but it should not take priority over recreation, watershed protection and wildlife habitat.

I feel these comments reflect those of many of the constituents in my supervisorial district, as well as my own feelings. Thank you for your consideration of this matter

Sincerely,

Erik Henrikson

Erik Henrikson
Supervisor, District 5

EH:rm

3323



COUNTY OF PLACER

MAY 22 1986

MAY 22 1986

FORESTHILL FORUM

BOX 207 / FORESTHILL, CALIFORNIA 95631

May 13, 1986

Ceri Larson
Forest Supervisor Tahoe National Forest
Hwy 49 and Coyote St.
Nevada City, Ca. 95959

Re Tahoe National Forest Land and Reserve Management Plan

The Foresthill Forum at the regular May 5, 1986 meeting
unanimously voted to urge adoption of Alternate Plan "I" for the
following reasons.

1 Timber harvest receipts are a significant factor in support
of the local school and maintenance of County roads in our area.

2. The stability of the local economy depends upon an adequate
supply of logs available to the local sawmill. (American Forest
Products employs 112 people and has an annual payroll of \$2,500,000 00)

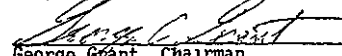
3 Greater multiple use of the Forest will enhance recreation
and mining and agricultural uses on the Foresthill Divide

The Foresthill Forum requests the U S Forest Service to consider
alternative harvesting methods as opposed to clear cutting on a large
scale

The present supply of "25% Funds" is critical to funding our
local school and County roads on the Foresthill Divide.

Thank you for considering our Views and recommendation of
Alternative Plan "I"

Respectfully submitted by


George Grant, Chairman
Foresthill Forum

8711

SIERRA COUNTY

Board of Supervisors
PO Drawer D
Downsville, California 95936
916-289-3295

May 29, 1986

United States Forest Service
Tahoe National Forest
Office of the Forest Supervisor
State Route 49 and Coyote Street
Nevada City, California 95959

ATTN Ms. Geri B. Larson
Forest Supervisor

Dear Ms. Larson.

Please find attached Resolution Number 86-51 of the Sierra County Board of Supervisors and a position statement of this Board relative to the Tahoe National Forest Land and Resource Management Plan.

We thank you for this opportunity and further thank you for accepting the testimony received on May 21, 1986 during a special public hearing of this Board of Supervisors held in Loyalton for the specific purpose of obtaining local input into the Forest Plan.

Thank you

Sincerely,

SIERRA COUNTY
BOARD OF SUPERVISORS

Gerry McCaffrey
Gerry McCaffrey
Chairman

JM:THB:bm 5/52
Attachment
cc: Attached List

TAHOE NATIONAL FOREST
JUN 2 1986

5/29/86



FILE TNF Plan

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United States Forest Service
Tahoe National Forest
Office of the Forest Supervisor
May 29, 1986
Page Two

cc Members of the Board of Supervisors, Sierra County
Members of Citizens' Task Force - Tahoe National Forest Plan
Norman Shumwa
Senator Alan Cranston
State Senator James Doolittle
State Assemblyman Wally Herger
Members of the Board of Supervisors, Plumas County
Members of the Board of Supervisors, Nevada County
Members of the Board of Supervisors, Placer County
Members of the Board of Supervisors, Yuba County
Members of the Board of Supervisors, Butte County
District Ranger Millard, Downsville Ranger District
District Ranger Bishop, Sierraville Ranger District
District Ranger Robique, Truckee Ranger District
Sierra Booster
Mountain Messenger
Sacramento Bee
Nevada Union
Sierra Sun
Portola Reporter
County Assessor
County Planning Director
County Clerk-Recorder

8711

IN THE MATTER OF
SIERRA COUNTY COMMENTS }
ON THE
TAHOE FOREST PLAN

RESOLUTION NO 86-51

RECITALS

The County of Sierra has reviewed the Tahoe National Forest - Land Management Plan and respectfully wishes to submit this resolution and letter in response A "Task Force" committee composed of varying interests of the County was appointed by the Board of Supervisors to develop an opinion of the potential impacts and benefits the various alternatives would have on the County

- 1 Whereas, the County of Sierra is a prime watershed, timber producing, natural resource and recreation area---these characteristics are the basic factors in determining the goals and objectives to set the stage for planning and allowing future growth, and,
- 2 Whereas, the County of Sierra is economically dependent upon the sustained uses of its natural resources for timber production, mining, recreation and agriculture, and,
- 3 Whereas, the County of Sierra is comprised of approximately 65% in Federal land holdings, which is predominantly the Tahoe National Forest, and,
- 4 Whereas, any alterations in land use practices or allocations of Federal land holding could have a deleterious effect upon the delicate economic balance of the County, and,
- 5 Whereas, the goals and objectives of the General Plan for the County of Sierra are to conserve and develop its great natural resources, and promote the public health, safety, peace, comfort, convenience and general welfare for the present and future citizens---the Plan emphasizes the sustained use of the County's natural resources for the purpose of maintaining the economic base. Therefore, it is imperative that the USFS Land Management Plan be as consistent and compatible with the General Plan as possible in order to avoid any private/public land use conflicts which could have a disruptive influence upon the County's fragile economic base, and.

NOW THEREFORE, THE BOARD OF SUPERVISORS OF THE COUNTY OF SIERRA RESOLVES AND DECLARES that based upon these statements of fact, the County strongly recommends that the Tahoe National Forest give full consideration to the comments attached as Exhibit A as developed by a County appointed Task Force, during the examination and adoption of an appropriate land use alternative(s). These comments represent the complete concerns of the Sierra County Board of Supervisors

Adopted this 30th day of May, 1986 by the following vote

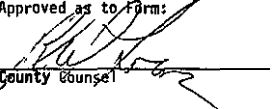
AYES Supervisors Hayes, McCaffrey, Marin and McHenry

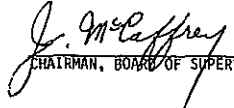
NOES None

ABSENT District No 2 Vacant

ABSTAINED. None

Approved as to Form:


County Counsel


CHAIRMAN, BOARD OF SUPERVISORS

ATTEST

(Seal)

By , Deputy
Clerk of the Board

THE FOREGOING INSTRUMENT
IS A CORRECT COPY OF THE
ORIGINAL ON FILE IN THIS
OFFICE.

ATTEST: JUN 2 1986

COUNTY CLERK AND EX OFFICIO
CLERK OF THE BOARD OF SUPER-
VISORS IN AND FOR SIERRA CO.,
CALIFORNIA

BY _____ DEPUTY

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SIERRA COUNTY

Board of Supervisors
PO Drawer D
Downsville, California 95936
916-289 3295



May 29, 1986

United States Forest Service
Tahoe National Forest
Office of the Forest Supervisor
State Route 49 and Coyote Street
Nevada City, California 95959

File' TNF Plan

Attn Ms. Geri Larson
Forest Supervisor

Dear Ms Larson:

The Sierra County Board of Supervisors wishes to express its appreciation to the Tahoe National Forest for the opportunity to comment on the Tahoe National Forest - Land and Resource Management Plan. The Tahoe National Forest is commended for its long-range planning effort and the respective commitments of time and resources during development of the Tahoe National Forest Plan.

INTRODUCTION

The Tahoe National Forest - Land and Resource Management Plan contains an extensive amount of data and information which requires not only familiarity with the land and resource planning process but the associated impacts to the social, economic, political and physical composition of the County. The Board of Supervisors in response to this extensive forest planning effort organized and appointed a special "task force" composed of a cross section of economic and special interests. This "task force" was charged with the responsibility of full-scale plan review and development of a position statement for ultimate consideration by this Board. The "task force" met regularly for several weeks and after extensive debate and discussion, developed a recommended position-statement which this Board unanimously and wholeheartedly supports. (The "task force" composition and membership is provided for your information as Exhibit A attached hereto.)

The "task force" statement has become the foundation for the following recommendations for plan implementation authored and approved by this Board of Supervisors.

RECOMMENDATIONS FOR PLAN IMPLEMENTATION

Sierra County possesses prime and unique watershed, timber producing, natural resource, and recreation areas which become the basic factors and/or characteristics for determining land use, development and resource allocations. The economic, social, political and physical impacts induced by management

Ms. Geri Larson
May 29, 1986
Page Two

decisions of the Tahoe National Forest are of paramount concern to this Board in its review of the Tahoe National Forest Plan.

The Board recognizes and supports the timber and wood products industry as one of the single most important resource oriented industries in Sierra County. Additionally, other resource needs include recreation and tourism, mineral extraction, agriculture, fish and wildlife, and ecological and conservation practices.

Therefore, the Board of Supervisors, in consideration of all proposed plan alternatives, stresses the need to sustain its timber industry. The management direction of Plan Alternative I and its emphasis on timber management is supported by this Board of Supervisors conditioned upon several modifications of its land base and resource management direction. These modifications to Plan Alternative I will allow for a successful co-existence between all resource oriented needs while sustaining an acceptable timber base on federal lands within Tahoe National Forest. The modifications to Plan Alternative I follow:

RECREATION

Recreation and tourism are important resource oriented industries in Sierra County and it is expected that their importance will increase in the future. Plan Alternative I does not provide sufficient emphasis on recreational commodities, recreational resource values and opportunities. Therefore, modifications will be necessary to accommodate and enhance these interests.

The Gold Lake Basin area (Management Area 009) is highly prioritized by Sierra County for recreation use and management direction must be developed to maintain and enhance the unique scenic and recreational values. The result will remove 6107 acres of productive timberland from regulated timber production. Salvage logging would be permitted to best utilize the resources and provide compatibility with the scenic and recreational values.

Those areas immediately contiguous to major reservoirs and water bodies should be managed for water-oriented recreation. Management direction would allow regulated timber harvest through "special cutting" (selection) on suitable timberland. "Special cutting" will maintain a generally continuous forest cover and can be compatible with the Sierra County General Plan recreation goals. This management direction is recommended around Boca, Stampede, Jackson Meadows, Bullards Bar, Bowman Meadow, Fordyce, Prosser, Fuller, French, Sugar Pine and Big Reservoirs, and Webber Lake.

There exists a lack of visual protection for State Highways 49, 89 and 80 and the Gold Lake Highway-County Road (S620). These roads have been designated in the County General Plan either a State or Scenic Highway as through Sierra County. The Board of Supervisors recommends the application of manager prescription Rx#8 but allow "special cutting" to be permitted timber harvest when scenic values are not compromised or natural y d i

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Ms. Geri Larson
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Page Three

There should be no clear cutting or even-aged management in any existing or potential recreation, potential winter sports/ski and proposed dispersed recreation areas and other sites identified as "not appropriate for timber production" (56,168 acres) land in Plan Alternative A. "Special cutting" will be allowed in these areas (except in existing developed recreation and ski areas (5200 acres) and in Lakes Basin M A 009 (6107 acres) where no regulated timber harvest will occur. This would keep the available timber-land base up, yet still maintain the quality of these areas for recreation.

Allow regulated timber harvest with "special cutting" only in the Mount Lola area (Management Area 033) to maintain its winter recreation area potential.

AGRICULTURE

There has long-existed a historical use of federal lands for grazing and agricultural purposes in Sierra County. The County wishes to maintain such land use allotments and believes that such uses are compatible with other resource uses. Range management intensities need to be increased over current levels to meet projected demands and under proper management direction can be beneficial to resource management.

The Plan Alternative needs to incorporate the range management intensities, outputs and range conversion activities of Alternative A. Intensive management should be increased from 25% to 75% of the permanent range, and extensive management should be continued on areas not intensively managed. Research, as Proposed In Alternative A, should be initiated to evaluate the potential of 12,555 acres of low-site eastside pine-stands for dual use (timber and forage). Consideration should be given to conversion of approximately 12,555 acres of low-site eastside to permanent range. Should research support this action. All conversion practices on public land should take into account the shelter and browse requirements of wildlife.

The use of off-road vehicles (ORV) should be restricted in grazing areas to avoid damages to productive range land. The Plan Alternatives should emphasize protection for primary and secondary range land. Any existing or proposed road closures and/or Controlled access of government lands should be done in consultation and agreement with grazing allotment users.

Summer dispersed recreation Opportunities should be de-emphasized on productive ranges by eliminating or discouraging informal campsites. The placement of summer recreational sites by the United States Forest Service should be done in consultation With the allotment users.

The Forest Service road network should be managed to reduce conflicts With existing livestock management allotments and practices. This objective can be accomplished by consulting with allotment users about any proposed roads and road improvements. Hazards caused by road work should be mitigated at the time of initial road construction by installing fences, underpasses, drainage structures and gates

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Page Four

Lodgepole stands or prevent invasion of productive meadows. Dry season harvesting should be scheduled and the time and location of each harvest should be coordinated with the allotment users.

The Board of Supervisors therefore recommends that the Forest Service adopt a consistent method of providing water to rangeland grazing interests prior to implementing any agricultural water project. This should take into consideration the technical expertise and local knowledge available from permittees who have been involved in on-site practices for many years.

Current grazing practices that conflict with the well being of wildlife could be restricted in cattle allotments and prohibited to sheep grazing until wildlife recovers from "declining trends". Grazing of all livestock on ranges rated as in fair to poor conditions should be eliminated until habitat at a wildlife populations recover. All range land conversion on public land should not remove bitterbush or other feed for deer.

FISH AND WILDLIFE

Fish and wildlife resources are a vital component of the Sierra County natural and economic environment. These resources provide for a wide variety of recreation and indirectly, economic benefits. This Board of Supervisors recognizes that management for fish and wildlife does not preclude resource extraction activities so long as sensitive areas are maintained and enhanced for their fish and wildlife values.

Particular Care with selection of any clear cut areas should be taken to insure minimal impacts on wildlife resources. Watershed integrity should be maintained for the protection of fish and wildlife habitat and clear cuts should be held to an average of 15 acres. Dispersion among blocks should be emphasized to reduce potential impacts.

Wildlife habitat should receive consideration with the use of selective hardwood cutting. It is recognized that hardwood stands offer an ecological niche for many wildlife species and the maintenance of hardwood levels should be encouraged to maintain viable populations of all wildlife species.

The wildlife maps submitted as a component of the Tahoe National Forest Plan do not adequately represent the migration corridors, fawning areas, holding areas, and winter and summer ranges of all wildlife, particularly resident deer herds. The Board of Supervisors recommends that the Forest Service utilize the California Department of Fish and Game maps in their analysis.

All future road construction should be designed and evaluated with regard to effects of fish and wildlife. All roads not vital to essential forest activities should be closed if they are not within the major arterial and collector System. Logging spurs should be closed after harvest to restrict access and provide retreat areas for wildlife.

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May 29, 1986
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LAND USE PLANS, POLICIES AND SERVICES

The County General Plan emphasizes an **economy** based on resource extraction industries. Therefore, **it is** imperative that the **Tahoe National Forest Plan** be consistent with the County General Plan in order to avoid any **private/public land use** conflicts which could have a disruptive influence upon the County economic base. Several **modifications** need to be addressed to reduce or eliminate potential conflicts.

The **Board of Supervisors** do not agree with the removal of land exchange **priority** for the Goodyear's Bar Townsite. The County has recently supported and actively **pursued** the enlargement of the Goodyear's Bar Townsite with the Forest Service for increased residential **opportunities**.

The Forest **Service** and Sierra County need to coordinate the seasonal closing of County roads and, if necessary, federal roads to **minimize** traffic impacts, hazards, and damage **during** any timber harvest activities and resource oriented uses.

The **Tahoe National Forest Plan** is an expansion of its discussion on potential impacts that would be **caused** by any winter sports development. It should clearly state that **environmental impact reports (CEQA) for private land and mineral development; (NEPA) for public lands will complement the social and economic impacts on proximate communities and surrounding natural resources**

It is noted that the Forest Service is increasing the use of concessionaire method for operating campgrounds. The end result to the County from concessionaire operated campgrounds is a direct loss of funds although the number of recreational **users** and recreational transportation impacts remain constant or increase with increased recreational opportunities

The County **recommends** that the continued or increased use of concessionaires should require a revised cost **formula** between Sierra County and the Forest Service. This will be proportionate to maintenance of a steady and reasonable reimbursement to the County.

MINING

Sierra County possesses mineral resources and the national demand for these resources is expected to continue to increase. Depletion of current mineral reserves and a national emphasis to reduce dependence on foreign **supplies** are among the reasons supporting continued prospecting and development of mineral resources on the Tahoe National Forest

The **Tahoe National Forest Plan** does not sufficiently recognize or document the practices of large-scale mining. Conflicts with mining operations, whether public or private, may result from such activities as timber production, recreation and agriculture. The Board of Supervisors recommends that a mineral

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May 29, 1986
Page Six

extraction **zone** be developed for **areas** that have been documented as having mineral resources of significance. The mineral extraction **zone** could overlay the entire forest and be applicable to both public and private lands. The end result would be **consistent** regulation of mining **projects** from both the local and federal levels and the identification and enhancement of mineral extraction potential.

Local demand for aggregate materials continues to increase as transportation costs increase and depletion of existing **sources** continues. Sites with sand, gravel and aggregate potential should remain available for extraction and development on the Tahoe National Forest

Plan Alternative **1** removes a total of 1061 **acres** from mineral extraction for the Tahoe National Forest.

ECOLOGICAL AND CONSERVATION PRACTICES

Sierra County is a prime watershed, timber producing, natural **resource** and recreation **area**. The general long range goals and Objectives of the County **are** to conserve and develop its great natural resources in an environmentally sound manner, and promote public health, safety, peace, comfort, convenience and general welfare for the present and future citizens and visitors of the County.

The **use** of land, intensity of land use and construction must not be permitted to violate sound Conservation and natural land Use **principles**

All resource development programs must be based on practices including

- Wise timber management for sustained yield of water and forest products
- Prevention of water pollution and continued use of water resources for recreation, water storage, **public/private** consumption, stream flow maintenance, and enhancement of fish and wildlife
- Prevention of **air** pollution for continuation of the excellent climatic conditions required for a healthful environment for people, wildlife and vegetation.

The natural beauty of the Tahoe National Forest draws many visitors to the area. This **is** an important economic factor in deciding management direction of the **Tahoe National Forest Plan**. Timber harvested areas should be reviewed to insure a minimum of damage to view as practicable. Reforestation of harvested areas should be accomplished as soon as possible upon completion of **harvest** activities. In addition, an effective follow-up plan should be **implemented** to insure reforestation is successful, and environmental damage minimized in reference to soil and water degradation

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May 29, 1986
Page Seven

Water quantity and quality are an important resource of the Tahoe National Forest and Sierra County. Stream zone management, identification, proper set backs and implementation of BMPs on land Use around streams is needed to assure water quality.

TIMBER

It is recognized that the timber industry is very important to Sierra County. Timber industry employment makes up over 20% of the total County work force. Approximately two-thirds (2/3) of the County budget comes from the timber related activities and the Federal Forest Receipt money comprises up to 50% of the County Road Budget and almost 20% of the school budget.

This Board of Supervisors needs to support a plan that will allocate the maximum amount of suitable timberland (capable of growing 20 cubic feet per acre per year) to timber production. This would be 607,861 acres initially and could decrease to 595,306 as low-site eastside pine stands are converted to rangeland

The productive capacity of suited forest lands should be fully utilized by maximizing forest growth using proper silvicultural systems applied on a site specific basis. Currently 70% of the timber stands on the Tahoe National Forest are understocked. These stands need to be brought into a more productive condition. Timber is a long-term crop and the Forest Service needs to commit now to increase forest growth so future demands for wood products will be met. Restricted timber management today will mean restricted harvests tomorrow.

Allowable harvests could be as high as 210 MMBF per year, however, harvests must be consistent with land allocations and resource values recommended by this Board.

The Forest Service should implement as aggressive and timely salvage program to capture as much of the 14.2 MMBF of annual mortality on the Tahoe National Forest.

Clear cut blocks should be held to an average of 15 acres. Under special circumstances, larger clear cuts up to 40 acres (current United States Forest Service policy) could be allowed when on-the-ground site-specific conditions dictate for reaching "long-corners" and for silvicultural reasons

HERBICIDES

There is currently a self-imposed voluntary ban of herbicide use on National Forest Land in California. However, all alternatives of the Tahoe National Forest Plan assume that herbicides will be used in timber management.

Herbicide use will be addressed in the Pacific Southwest Region DRAFT Environmental Impact Statement: Vegetative Management for Reforestation, which according to the Forest Service will be released soon and added as a supplement to the

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Page Eight

Tahoe Land and Resource Management Plan DEIS with a 90 day public comment period.

On the average, a continued ban on herbicides would result in an average decrease of 30% in timber yield and an increase of 27% in the cost of vegetative management. Therefore, an annual allowable cut of 210 MMBF, as proposed by the Sierra County Board of Supervisors, could actually be as low as 147 MMBF if herbicides are not used

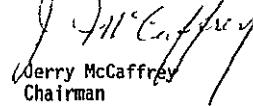
The Board of Supervisors expresses its concerns on the environmental, health, safety, economic and timber yields aspects of the herbicide issue. However, at this time, the Board of Supervisors has taken a no action position on herbicides. Sierra County will adopt a position at the appropriate time when the Vegetative Management DEIS is completed and reviewed

Therefore, this Board strongly encourages the United States Forest Service to support and implement the concepts reflected in this official County position statement. Sierra County is one (1) of six (6) counties which comprise the Tahoe National Forest and is the county which receives a great majority of the timber, recreation and mining activities associated with the management of the forest. We therefore urge that the appropriate emphasis and priority in Your planning and decision-making process be given to the position of the Board and the fine residents of Sierra County.

Thank you

Sincerely,

SIERRA COUNTY
BOARD OF SUPERVISORS



Jerry McCaffrey
Chairman

JF:THB jc-5/53

If there are any questions or need for clarification of the comments expressed hereto, please contact the following persons

Tim H. Beals or Joe C. Heckel
sierra County Planning Department
P. O. Box 530
Downsville, California 95936
916/289-3251

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APPENDIX A

EXHIBIT A
TAHOE FOREST PLAN

TAHOE NATIONAL FOREST-LAND MANAGEMENT PLAN
SPECIAL COUNTY TASK FORCE

<u>Appointees</u>	<u>Affiliation</u>
Mr. Craig McHenry (Chairman)	county Supervisor, District 5
Mr. Ed Hall	County Fish and Game Commission
Mr. Bill Banka	Forester, Sierra Pacific Industries
Mr. Brooks Mitchell	Associated California Loggers
Mr. Ron Voss	Sierra Pacific Industries
Mr. Mike Herrington	Herrington's Sierra Pines Resort
Mr. Carl Genasci	Ranching and Agriculture
Mr. John Frank	County Human Services Director
Mr. William G. Copren	County Assessor
Mr. Joe Hecke	County Planning Department
Mr. Tim Beals	County Director of Transportation and Planning
Mr. Rick Frederking	Mining
Ms. Marlea Draney	Sierra County Conservation Club

	<u>AIL. I</u>	<u>sierra County</u>	<u>Difference Between Sierra Co 6 AIL I</u>
Timberland Base	613,968	607,861	-6,107
Special Cutting (selection)	79,557	173,979	+94,422
Acres from "2"			044,867
Acres from "3"			+37,000
Long Rotation Even-Aged Management	89,618	52,618	-37,000
Acres from "3"			
Short Rotation Even-Aged Management	444,793	381,264	-63,529
Acres from "1"			-12,555
Acres from "2"			-44,867
Acres from "2" completely removed from timberland base			-6,107

SIERRA COUNTY TASK FORCE ALLOWABLE CUT

Special Cutting	173,999 acres x 183 bd. ft./acre/year	yield	31.8 MMBF
Even Aged Management	433,882 acres x 394 bd. ft./acre/year	yield	<u>171.0</u> MMBF
TOTAL			202.8 MMBF
Sanitation/Salvage Program			
- 14.2 MMBF annual mortality			7.2 MMBF
- Assume some mortality harvested in scheduled sales			
- Assume this program will maximize salvage of mortality			
TOTAL			<u>210.0</u> MMBF

SIERRA COUNTY

Board of Supervisors
PO Drawer D
Downsville California 95936
916-289 3295



June 2, 1966

The attached letter was received too late for inclusion in the Sierra County Board of Supervisors' response and is included for your information.

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RUBY DEVELOPMENT COMPANY
P. O. Box 1241
Grass Valley, California 95945

May 23, 1986

Mr Craig McHenry
Sierra County Board of Supervisors
P. O Box 1630
Portola, Calif 96122

Re. Tahoe National Forest Plan

Dear Mr McHenry:

In response to Mr. McCaffrey's letter of March 18, 1986, wherein he requested that I assist your special county committee prepare a response to the U. S. Forest Service Tahoe National Forest Plan. I am enclosing a response addressing the effects of said plan on mining in Sierra County.

Mining on federal lands administered by the Forest Service is governed by the Mining Law of 1872 and is not generally affected by the Tahoe Plan. The proposal to withdraw the Highway 49 scenic corridor from mineral entry has a substantial and, in our opinion, negative effect; so we have focused our comments on the proposed withdrawal.

As you suggested in our recent telephone conversation. I am forwarding a copy to Tim Beals, Sierra County Planning Department. I am also sending a copy to Claude Huber, Northern Mining Council.

If any of you gentlemen wish to reach me for further comments or information, please call me at 916/265-3444. Please keep me informed of any further developments in this matter.

very truly yours,



W. R. Frederking

"Recreational mining" is a term used to describe casual and short-term gold panning, exploration, and, mostly, dredging. Such activities are typically engaged in by vacationers passing through Sierra County and who do not desire to locate or own mining claims or to assume the responsibilities and obligations attendant with such ownership.

The Forest Service perceives a demand for recreational mining and has proposed mineral withdrawal as a means of satisfying such demand. We are of the opinion that any demand for recreational mining would be best served by private individuals and organizations within the existing structure of laws and regulations.

The Mining Law clearly provides that the owner of a mining claim can allow others to mine on his claim. If the owners of mining claims along the Highway 49 scenic corridor perceive a demand for recreational mining, certain of them would undoubtedly open up their claims to the public on a fee basis. On unclaimed U. S. Forest land the public can, of course, enter for free. The Forest Service could encourage the opening of private "dredging parks" on mining claims -- similar to and, perhaps, incorporating campgrounds -- to serve recreational miners. Organizations have already emerged for precisely such a purpose.

In summary, we believe that the Highway 49 scenic corridor in Sierra County should not be withdrawn from mineral entry. Mineral usage is not incompatible with the scenic objectives. As regards recreational mining, the preceding suggestion or some reasonable alternative could satisfy the perceived needs of the recreational miner without sacrificing the rights of every U. S. Citizen to locate and own mining claims under the 1872 Mining Law. Such a suggestion would also serve to increase, rather than decrease, the revenues to Sierra County and would not substantially alter the Forest Service's current management directives, budget, and liabilities.

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Comments on the Effects of the Tahoe National Forest Plan on

MINING IN SIERRA COUNTY

✓ The proposal in the proposed Tahoe National Forest Plan which appears to have the greatest potential effect on mining in Sierra County is the suggested withdrawal from mineral entry of the "scenic corridor" along Highway 49. We do not believe that such a withdrawal is necessary or of benefit.

First, we would call attention to the fact that, since such withdrawal does not affect currently existing mining claims, it would have little immediate effect. The effects would be gradual and cumulative and would serve to steadily reduce the number of mining claims within said corridor. This would result in a reduction in property tax income to sierra county

Second, we believe that Highway 49 is generally perceived as a highly scenic corridor in its present state of usage. Since mining activities are a substantial component of the present usage, it appears self-evident that mining is not incompatible with the scenic objectives of the scenic corridor. It should also be noted that the currently-existing laws and regulations administered by both the Forest Service and Sierra County tend to mitigate any mining activities which may be potentially detrimental to the scenic quality of Highway 49.

Third, the Highway 49 corridor through Sierra County has been a major gold mining region since the earliest days of the State of California. We think that mining is definitely in keeping with the historical context of our region.

✓ Finally, the primary mining activity along the Highway 49 corridor is dredging in the North Yuba River. The stated intent of the Forest Service is that dredging will not be restricted in the scenic corridor, but only the location of mining claims. This represents an infringement of the rights of every U. S. Citizen to locate and own mining claims as provided under the Mining Law of 1872. It is obvious that such an infringement should not be contemplated except when required by an urgent public need.

The public needs which would purportedly be served by the proposed withdrawal from mineral entry of the Highway 49 scenic corridor are (1) scenic considerations, which were addressed above; and (2) a perceived need for so-called "recreational mining".

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17-2-000795-0

BOARD OF SUPERVISORS
COUNTY OF SIERRA, STATE OF CALIFORNIA

IN THE MATTER OF:

Testimony in Regards to the
Tahoe National Forest Plan ...

RESOLUTION NO. 86-39

WHEREAS, Sierra County has the largest acreage involved in the
[redacted] and

WHEREAS, Sierra County will feel any impact this plan will have more
than any other county in the Tahoe National Forest Plan, and

NOW WHEREFORE, BE IT RESOLVED, the Board of Supervisors of the County of
Sierra, does hereby request a meeting to be scheduled in Sierra County
before the June deadline, where public input from Sierra County can be
received

Adopted by the Board of Supervisors of the County of Sierra on the 15th
day of April, 1986, by the following vote:

- AYES. Supervisors Hayes, Withycombe, McCaffrey, Marin and McHenry
- NOES. None
- ABSENT. None
- ABSTAINED. None

J. McCaffrey
CHAIRMAN, BOARD OF SUPERVISORS

Approved as to Form.

[Signature]
County Counsel

ATTEST

CLERK OF THE BOARD

By *[Signature]*, Deputy

FS	RECEIVED	RS
4/29		
LMP Staff		
Action		Info
ALL		
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THE FOLLOWING INSTRUMENT
IS A CORRECT COPY OF THE
ORIGINAL ON FILE IN THIS
OFFICE APR 25 1986

ATTEST

COUNTY CLERK AND EX-OFFICIO
CLERK OF THE BOARD OF SUPER-
VISORS IN AND FOR SIERRA CO.,
CALIFORNIA
67 DEPUTY

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3 OF SUPERVISORS
(408) 425 2201



COUNTY OF SANTA CRUZ

ADMINISTRATIVE CENTER

701 OCEAN STREET SANTA CRUZ CALIFORNIA 95060-4069

FORBES DISTRICT	ROBLEY LEVY (SECOND DISTRICT)	GARY A PATTON (THIRD DISTRICT)	E WAYNE MOORE JR (FOURTH DISTRICT)	JOE CUCCHIARA (FIFTH DISTRICT)
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TAHOE NATIONAL FOREST

FEB 7 1986

February 4, 1986

Geri B. Larson
Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada city, CA 95959

RE: PROPOSED FOREST SERVICE LAND MANAGEMENT PLAN
FOR THE TAHOE NATIONAL FOREST

Dear Ms. Larson:

I have recently had an opportunity to review materials outlining the Provisions of the Draft Land Management Plan prepared by the Forest Service for the Tahoe National Forest. I am writing to state my strong objection to the provisions of the Draft Plan. While I live in Santa Cruz County, many miles from Tahoe. I, and the constituents I represent, frequently utilize the Tahoe National Forest as a recreational resource. It is of the utmost importance to me that plans for the Tahoe National Forest respect its recreational and natural resource value.

It is obvious to me that the Draft Land Management Plan now being considered does not respect the Tahoe National Forest as either a recreational resource, or as a natural resource for future generations. First, I object to the elimination of the many roadless areas that now exist in the Tahoe National Forest. I believe that roadless areas should be preserved for future inclusion in the wilderness system.

Second, I completely oppose the plans contemplating large and continuing clearcutting, with the eventual result that virtually all the conifer stands in the Tahoe National Forest would be even aged, in essence "factories in the field," and requiring significant herbicide spraying as a management technique. Santa Cruz County for many years has used selective harvesting techniques, employing a 60-40 cut, which produces a viable local timber industry, while preserving all of the amenities of an unharvested forest. I urge that the final Land Management Plan incorporate the use of such selective harvesting techniques, and in fact require them. Clearcutting should not be allowed in the Tahoe National Forest.

Geri B Larson
February 4, 1986
Page 2

I believe that the grazing and livestock fees suggested in the Draft Plan are inadequate, and would urge that overgrazing would be discouraged. In addition, I have had an opportunity to review a "Citizens Alternative" plan, submitted by the Sierra Nevada group of the Sierra Club, the Protect American River Canyons Organization, and the South Yuba River Citizens League. I urge that the Forest Service adopt a plan consistent with the "Citizens Alternative." This alternative plan has been thoughtfully prepared, and in my estimation best meets the long-term recreational and resource needs of our nation.

Thank you for taking these extremely strongly-felt comments into account.

Very truly yours,


GARY A. PATTON, Supervisor
Third District

GAP:ss
1507U

cc: Zane Smith, Regional Forester, Pacific Southwest Region, USDA Forest Service
Senator Cranston
Representative Gene Chappie
Senator Pete Wilson
Representative Ed Zschau
Representative Leon Panetta

MAY 27 1986

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BEFORE THE BOARD OF SUPERVISORS
OF THE COUNTY OF YUBA

IN RE:

RESOLUTION SUPPORTING PLUMAS
NATIONAL FOREST LAND AND
RESOURCE MANAGEMENT PLAN
MODIFIED ALTERNATIVE CEE
AND TAHOE NATIONAL FOREST
LAND AND RESOURCE MANAGEMENT
PLAN MODIFIED ALTERNATIVE I

RESOLUTION NO. 1986-98

WHEREAS, in 1891 Congress established our National Forest System and created the US Forest Service to manage these Forests for the continual enjoyment and prosperity of all America, and

WHEREAS, the multiple use concept has been a mainstay to the utilization of the National Forests, and

WHEREAS, under the Forest Service's land and Resource Management process, the public is asked to comment on the various alternatives for future land management of our National Forests, and

WHEREAS, the Plumas National Forest Land and Resource Management Plan Modified Alternative CEE and Tahoe National Forest Land and Resource Management Plan Modified Alternative I allocate the most acreage for multiple-use management,

NOW THEREFORE BE IT RESOLVED that the Board of Supervisors of Yuba County hereby supports the adoption of Plumas Plan Alternative CEE and the Tahoe Plan Alternative I and urges that the multiple use concept be continued as the highest priority in National Forest policy.

BE IT FURTHER RESOLVED that the Board of Supervisors only supports the clearcutting portions of said alternatives if reforestation is done on a timely basis, similar to that required of private landowners.

PASSED AND ADOPTED at a regular meeting of the Board of Supervisors of the County of Yuba, state of California, on the 20th day of May 1986, by the following vote:

AYES: Supervisors Deveraux, Dower, Harper, Mathews and McGill
NOES: None
ABSENT: None

Michelle D Mathews
Chairman

ATTEST: PATRICIA H STEWART,
Clerk of the Board of Supervisors

Patricia H Stewart

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

Dennis A. Barlow
DENNIS A. BARLOW, County Counsel

Patricia H Stewart

5-22-86



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Ms. Geri E. Larson, May 23, 1986

page 2

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Nevada County Resource Conservation District
113 Presley Way Suite #1 Grass Valley California 95945

TAHOE NATIONAL FOREST

May 23, 1986

MAY 28 1986

Ms. Geri E. Larson
Forest Supervisor
Tahoe National Forest
Highway 49 & Coyote Street
Nevada City, CA 95959

RECEIVED

SUBJECT. Tahoe National Forest Land and Resource Management Plan.

Dear Ms Larson,

The Board of Directors of the Nevada County Resource Conservation District wishes to comment on the subject Plan. We respectfully request that our comments and recommendations be considered when finalizing this Forest Plan.

We must preface our remarks by referencing our role in the community. The California Public Resources Code, Division 9, directs all RCDs to promote the management and wise use of the soil, water, and related natural resources within their area of jurisdiction. In an effort to make responsible, constructive recommendations, we have entertained input from representatives of Bohemia, Inc, the local Sierra Club chapter, the Soil Conservation Service, USDA, and your agency. We particularly want to express our appreciation for the input of two of your staff members, George Cadzow and Michael Zan, during our May Board meeting.

The resource concerns which we wish to address relate to soils, water quality, timber harvesting, and wildlife habitat/riparian areas. In addition, we will comment on budget and manpower constraints and forest land management in general.

SOILS

According to the Draft Environmental Impact Statement (DEIS), reducing long-term productivity by erosion, loss of nutrients, displacement, compaction and repeated burning of vegetation, is probably the greatest hazard to the soil resource (page 3.62). The Forest Service acknowledges the importance of soil productivity by virtue of its long-range goals to maintain long-term timber outputs and protect water quality. It is further acknowledged that acceptable methods of estimating timber productivity based on soil potential rather than site class need to be developed. Also, monitoring the effectiveness of Best Management Practices (BMPs) in maintaining soil productivity is proposed.

Also anticipated is the completion of a second order Soil Resource Inventory (SRI) on about 10,000 acres each year beginning in fiscal year 1986. It is obvious that the effects of proposed timber harvesting methods on soil productivity need further study. Soil productivity depends partly on the regeneration of diversified plant material. Does an adequate data base exist to justify even-aged management? The second order SRI should provide that data base.

Soils on about 23,000 acres of capable forest land have been inventoried as eroded or altered. Disturbance on these soils has reduced their productivity by one or more site classes. Soil productivity on many of these sites could be increased through soil improvement practices such as fertilizing and respreading topsoil now in windrows or piles.

Recommendations: The highest priority should be given to complete the second order SRI, focusing on lands with known soil management problems and lands that are made available for timber sales. This inventory should be completed prior to logging and used as the data base in shifting from site capability to soil potential as the basis for estimating timber productivity. In addition, this second order SRI should address soil loss tolerance limits for each soil type.

The monitoring program proposed to evaluate the effectiveness of BMPs in maintaining soil productivity after harvesting needs further clarification. The scope and details of this monitoring program should be well-defined. Who is responsible for monitoring, how will monitoring be accomplished, what criteria will be evaluated, what time frames will be used, and, finally, what course of action will the Forest Service take if harvesting methods significantly reduce soil productivity? The critical step in maintaining or enhancing soil productivity is monitoring and enforcement. If the site is not treated as planned, heavy fines and bonding should be imposed to guarantee that the soil resource does not suffer. All sites must be carefully planned by a qualified technician and observed during and after logging, with followup monitoring until the site is stable and vegetation is established.

Consideration should be given to protect and reclaim capable forest soils that have been reduced in productivity by one or more site classes. Although the area involved encompasses a small fraction of the entire forest, bringing this land back in to production should be given greater consideration. Where reclamation of abandoned hydraulic mine sites is not feasible, proper management of these areas should be encouraged to minimize additional erosion and mass movement. Proper management may include opening these areas up to recreational use or limiting human activities, depending on site characteristics.

Site specific erosion hazard evaluations should be calculated after the completion of a timber harvest operation. Erosion control measures should be implemented prior to the start of the rainy season to reduce soil loss below the capability of particular soil types for regeneration.

The Forest Service should accelerate its efforts to complete a Geologic Resource Inventory for the Tahoe National Forest to determine slope failure guidelines. If this cannot be done practically for the entire forest, this inventory should at least focus on known sensitive areas and on proposed harvest areas if geologic hazards are suspected

WATER QUALITY

Protecting water quality from sedimentation is a primary concern of this RCD. The most effective method to protect water quality during timber harvest activities is the establishment of adequate streamside management zones (SMZs). Maintaining riparian areas within these SMZs is especially critical in providing a sediment barrier and wildlife habitat. Suggested standards for SMZs that are listed below apply to each side of the water body, not to the total for both sides.

Recommendations. Timber harvesting should not be allowed within SMZs adjacent to perennial streams and lakes. The following standards for SMZs associated with these water bodies should be considered.

<u>Slope</u>	<u>SMZ</u>	<u>Filter Zone</u>
less than 50%	100' plus	50'
50-70%	150' "	50'
over 70%	200' "	50'

Within the additional 50' buffer, or filter zone, timber harvesting without the followup broadcast burning should be allowed

Minimum standards for SMZs adjacent to intermittent and ephemeral streams should also be established. As stated in the DEIS, maintaining adequate ground cover along intermittent and ephemeral streamcourses on steeper slopes while broadcast burning slash in cable-logged regeneration areas could be a problem (page 4 70). In our opinion, this statement points to the need to set minimum standards in advance for Intermittent and ephemeral streams, rather than making that decision during project-level planning. Harvesting of merchantable timber should be allowed within these SMZs, but riparian vegetation and small trees should be retained. If tractor logging is employed within these SMZs, care should be taken to avoid disturbing stream channels

Again, monitoring and enforcement are critical in providing adequate SMZs, particularly during the broadcast burning process. If infusion into the SMZ occurs, enforcement procedures should be initiated to correct the damage

Continued monitoring for water quality impacts associated with herbicide applications and acid rain in the lakes should also be encouraged.

TIMBER HARVESTING

Forty-acre maximum clearcuts are called for in this plan. While the size of individual clearcuts may not be significant, the potential exists for cumulative impacts if numerous clearcuts are made in the same watershed.

Recommendations: During the project-level planning phase of timber harvest operations, consideration should be given to avoid numerous clearcuts in the same watershed within a short time frame

Consideration should be given during timber harvest operations to avoid dragging logs across streams which may damage SMZs. Options include limiting clearcuts to one side of a stream or high-lining logs on the same side of the stream where they are harvested.

The red fir forest type typically has difficulty regenerating after a clearcut. Uneven aged management should be utilized here rather than clearcuts

WILDLIFE HABITAT/RIPARIAN AREAS

The various alternatives in the plan favor either early, mid, or late succession wildlife species. The choice of silvicultural systems to best manage wildlife habitat depends on which species are to be emphasized. Regardless of which treatment is used in a stand, some species will benefit and others will not.

Recommendations: Overall, a mix of the silvicultural systems in the forest probably best achieves most wildlife management objectives. In addition, retaining adequate stands of oaks, other hardwoods, and riparian vegetation (SMZs) will enhance wildlife populations. The riparian areas in particular provide critical habitat for wildlife, especially near clearcuts

BUDGET AND MANPOWER CONSTRAINTS

Regardless of the alternative plan finally decided upon for the Tahoe National Forest, it will undoubtedly depart from the current management plan. Budget and manpower allocations should be compatible with the selected plan

Recommendations. Adequate personnel levels should be achieved relative to the selected Plan of Action for this forest. More consideration and authority should be given to specialists in the fields of hydrology, soils, and biology

BMR must be followed throughout the planning, implementing, and enforcement stages. Enforcement must be stringent and consistent and accompanied by severe penalties, such as fines and bonding. Accountability to the public trust must be a priority for everyone involved in managing and utilizing our National Forests.

3747

GENERAL FORESTLAND MANAGEMENT

It is obvious that Forest Service management practices will continue to experience public scrutiny. With this in mind, the following general recommendations are offered to help make this future interaction more positive and constructive.

Recommendations. Timber sales larger than 1 million board feet should necessitate a public notice of that sale, such as required by the California Forest Practices Act

The Forest Service should plan and hold periodic field trips to inform and educate the interested public on specific management practices

The Forest Service should co-ordinate with the County of Nevada in establishing and maintaining appropriate zoning to limit homes in productive forest lands and high fire hazard areas. This co-ordination will also insure better ingress and egress for fire fighting equipment

The Forest Service should actively pursue a policy of Co-ordinated Resource Management Planning (CRMP), due to the checkerboard ownership pattern

This concludes our comments and recommendations, which we hope are useful to your agency in finalizing the Plan of Action for the Tahoe National Forest. Thank you for the opportunity to comment.

Sincerely,



Chauncey B Poston
President
Nevada County Resource Conservation District

cc: Nevada County Board of Supervisors
Sierra County Board of Supervisors

NATIONAL FOREST
MAY 9 1986

2301

230



COUNTY OF NEVADA



May 7, 1986

Tahoe National Forest
Box 49 and State Street
Nevada, California 95959

Attn: Mrs. Geri B. Larson, Forest Supervisor

RE: Tahoe National Forest Land and Resource Management Plan

Dear Mrs. Larson:

The Nevada County Fish and Wildlife Commission has endeavored to review the reference Plan with respect to its potential affects, both positive and negative, on the fish and wildlife of Nevada County. We broaden the base of our review because it must be understood that while the National Forest does provide the bulk of the summertime habitat the adjoining private and public lands, at the lower elevations, also host a majority of the same animals for a significant period of time. Initially it was our hope to stay out of what appears to be the most volatile issue of the plan, that of timber harvest, but in making our review that seems impossible. The entire forest is comprised of many ecosystems all of which relate to the trees that are intended for harvest.

Our concern relative to the various levels of timber harvest can probably best be related to, but certainly not limited with, our concern for the dwindling deer herds. Timber harvest can have a direct affect on many aspects of the deer herd and other animals too numerous to mention. We are very concerned that the proposed clear Cuts, and the subsequent intense planting and herbicide practices, will adversely affect habitat requirements of these many animals. We are further concerned that clear cuts on the steep slopes the National Forest is noted for will increase erosion potential which in turn will increase siltation in a significant number of streams and eventually reduce trout and other aquatic life.

Our concern relative to the various levels of timber harvest can probably best be related to, but certainly not limited with, our concern for the dwindling deer herds. Timber harvest can have a direct affect on many aspects of the deer herd and other animals too numerous to mention. We are very concerned that the proposed clear Cuts, and the subsequent intense planting and herbicide Practices, will adversely affect habitat requirements of these many animals. We are further concerned that clear cuts on the steep Slopes the National Forest is noted for will increase erosion potential which in turn will increase siltation in a significant number of streams and eventually reduce trout and other aquatic life.

Our concerns of timber harvest are also directed towards the removal of hardwoods to ten percent of their Forest capacity, interference with fawning areas and encroachment with migration routes and holding areas. Our review of the Plan leads us to believe that none of these issues have been addressed to the degree necessary to assure the protection Of these crucial elements of the forest ecosystem's.

The Management Areas are a step in the right direction in many of these regards, but they fall short as to specifics. We realize you are planning an area of almost a million acres of land, but that is all the more reason to be specific as to the mitigation's and controls you propose. The Standards and Guidelines seem to be requirements. The Practices and Prescriptions seem to be maybe's. We feel that your Plan could be truly enhanced by having the Practices and Prescriptions for wildlife outlined within a management area's override the other resource management considerations.

The Monitoring of wildlife within the management zones is not satisfactory. There does not appear to be a sufficient budget, but more importantly the frequency of review is grossly inadequate. An entire specie could be lost in five years and not reported for five more. This may be the gross example, but it could also be reality.

Last, the ageless issue of Roads and their affect on wildlife and habitat. It appears that the various alternatives of the Plan provide for an increase of between 25 and 40 percent in the road system. Every mile of road built reduces available habitat and also potentially interrupts migration routes, interferes with fawning areas, interferes with holding areas and makes game animals more available. Most tmber harvest roads Should be destroyed and replaced after the harvest is complete.

In summary we recommend that:

1. The Management Area's be rewritten before the Plan is adopted to include more specific requirements regarding the wildlife of each of the many areas:

2301

2. that the Practices as described within each Management Area be increased in importance to stand as an equal to all other aspects of forest management;

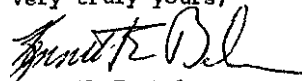
3. that the hardwood level of the forest be reduced no more than fifty percent of their current level;

4. that the practice of Road maintenance closure be more thoroughly reviewed: and

5. that the affect of clearcuts be more thoroughly reviewed with respect to erosion, the affect of even aged stands as to habitat, and the affect herbicide use has on young growth management within the replanted area.

We would like to take the opportunity to thank you for the cooperation extended during our review of the Plan by your staff. Their presentation to the Commission and their subsequent input has been very helpful in our review process. we sincerely hope you and the Plan organizers consider our thoughts and recommendations in the preparation of the "final" Tahoe National Forest Land and Resource Management Plan.

Very truly yours,



Kenneth E. Baker
Chairman

cc Nevada County Board of Supervisor's
Mr. Jack Parnell - Director, DF & G
Mr. Paul Jensen - Manager Regional 11, DF & G



3409 3620

TAHOE NF

HIGH SIERRA RESOURCE CONSERVATION & DEVELOPMENT AREA 23 1986

251 AUBURN RAVINE ROAD SUITE 201 AUBURN CALIFORNIA 95603

TELEPHONE 818 9827-8830

To: Geri B. Larson, Forest Supervisor
Tahoe National Forest

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The High Sierra Resource Conservation and Development (RC&D) Area covers the counties of Sierra, Nevada, Placer and El Dorado. The High Sierra RC&D Council is concerned with the development of the area resources for economic growth and stability, and long term conservation of those resources.

The management of the Tahoe National Forest's resources are vital to the economy of Sierra, Nevada, and Placer Counties. Desired management of the Tahoe National Forest will consider long term productivity while maintaining the unique scenic beauty.

Regardless of the plan selected. the following items should be included.

- We agree that the completed soil resource inventory be used to set management standards. All management plans, whether for recreation, timber, or grazing, should be related to the soil capabilities. We recommend that tolerable soil loss ("T"), of the various soils identified in the soil resource inventory, be set and used in determining the level of management.

By setting "T", Best Management Practices (BMPs) can be determined to insure minimum loss of soil and long term use of the area and it's resources.

- In addition to the use of the soil resource inventory in setting land use, certain land allocations should be identified and addressed for special management. Examples are stream zones, and granitic soils.

Water quantity and quality, are an important resource of the Tahoe National Forest. Stream zone management, identification, proper set backs and implementation of BMPs on land use around streams is needed to assure water quality.

Granitic soils pose special management problems. Identification of these areas is needed to impose the needed BMP to prevent these areas from becoming a water quality and aesthetic problem.

3409

- The natural beauty of the Tahoe National Forest draws many visitors to the area. This is an important economic factor in deciding management of the National Forest. Timber harvested areas should be reviewed to insure a minimum of damage to view as practicable. Reforestation of harvested areas should be accomplished as soon as possible after harvest with an effective follow-up plan to insure reforestation is successful, and environmental damage minimized in reference to soil and water degradation
- There is concern on protection of both private and public lands from wildfire in the Tahoe National Forest. The checkerboard ownership pattern presents real problems in fire protection and management. This appears as an ideal situation to implement "Coordinated Resource Management Planning". These issues need to be expanded in the final draft.

Implementation of any final plan depends on the budget of the Tahoe National Forest. Conservation of the resources must not be sacrificed to implement the management plan.

Lauro de Rojas

Lauro de Rojas
President, High Sierra RCSD Council

20,457
~~11,344~~

11,344

LMP
Comment

SIERRA COUNTY

Fish and Game Commission
P.O. Box 68
Sierraville, CA 96126



May 11, 1986

The Honorable Board of Supervisors
Sierra County
Sierra County Courthouse
Courthouse Square
Downsville, CA 95936

RF: Tahoe National Forest Land Management Plan

Dear Members of the Board:

There are many important factors to be considered which will have dramatic effects on the future of Sierra County's Fish and Wildlife Resources. The Timber Harvest Schedule as outlined in the Tahoe National Forest Plan is probably the single most important factor and one which Sierra County has some control over and should be given serious consideration. The fact that Fish and Wildlife Resources are a significant part of Sierra County the Impact of the Tahoe National Forest Plan as it relates to non-timber resources should be carefully weighed.

Therefore, the Sierra County Fish and Game Commission makes the following recommendations with regard to the Tahoe National Forest Land Management Plan:

I. SPECIAL CUTTING

Clear cutting should be held to an average of 15 acres in alternating block areas. Any use of herbicides in conjunction with clear cutting in these areas would not be acceptable. Natural reforestation will furnish good quality food sources for wildlife. The total number of clear cut acres per year should not exceed 1,800 acres. We are concerned further by the fact that clear cuts, particularly on steep slopes would increase erosion, which could significantly increase siltation into streams and rivers adversely affecting fish habitat and other aquatic life.

JUL 23 1986

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7/23

Tahoe National Forest Land Management Plan (cont'd)
Page -2-

II. ALLOWABLE HARVEST

The use of herbicides would only result in a total detriment to fish, game, and non-game species. There are other alternatives for brush control (i.e., hand machines). These practices should be used.

The recommendation to reduce hardwood stands in the lower elevations would be a detriment to all wildlife, therefore, we feel the hardwood level of the forest be reduced no more than fifty percent (50%). Consideration should be given to wildlife habitat with the use of selective hardwood cutting to fill the need of the wildlife.

III. FISH AND WILDLIFE HABITAT

The U.S. Forest Service's proposal and maps for this project we feel are inadequate. This plan or proposal should be evaluated and reevaluated as to properly address the migration corridor, spawning area, holding area, winter and summer range and effect on all wildlife game and non-game species alike.

IV. GRAZING

Current grazing practices that conflict with the well being of wildlife should be restricted to cattle allotments and prohibited to sheep grazing until wildlife recovers from "declining trends". Grazing of all livestock on ranges rated as in fair to poor condition should be eliminated until habitat and wildlife population recover. All range land conversion practices on public land should be prohibited.

V. TRANSPORTATION DEVELOPMENT AND MANAGEMENT PLAN

All future road construction should be designed and evaluated with regard to the effects on wildlife. Existing studies on the subject should be used. All roads not vital to essential forest activities should be closed if they are not within the forest system but in arterial, collector or non-major road programs. All roads not under major road programs not only take timber out of production, but are a detriment to wildlife migration routes.

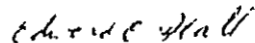
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Public access by way of tributary roads from
logging operations disrupt all wildlife species.

The Sierra County Fish and Game Commission requests that the
Sierra County Board of Supervisors take the above items into
serious consideration and give their full support to same in
their recommendations to their appointed Review Committee
of the Tahoe National Forest Land Management Plan.

The Board's cooperation in this matter is sincerely appreciated.

Respectfully,



Edward L. Hall
Commission Chairman

EEH:mjt

TAHOE NATIONAL FOREST

JUL 3 1986

11,316

110 Lakeview Dr
Auburn, Ca 95603

June 1, 1986

Geris B Larson
Supervisor Tahoe National Forest

Dear Ms Larson,

Clearcutting in the mountains, and especially in a mediterranean climate such as California's, has so many far-reaching ramifications that brevity in its discussion becomes a problem. However, it is reasonable to assume that the following will occur. The economy of Auburn and other foothill and mountain communities will suffer as tourism decreases from the losses in recreational and esthetic possibilities. Opportunities. Water quality and fishing will suffer from siltation, pesticides, herbicides and general riparian degradation. Runoff and flooding will increase locally and especially far downstream as the watershed is snipped clean. The Water table will lower because runoff will increase and replace slow percolation. The life expectancy of dams and their reservoirs will decrease as they more quickly fill with Silt. The expected State sanctioning of mountain lion slaughter will all be in vain because monoculture, even-aged Sterile plantations cannot supply the diverse browse to sustain a healthy deer population. There will be periodic epidemics of tree diseases within the monoculture plantations, such as happened in our monoculture corn belt or the monoculture Street tree plantings of Modesto Ash in the Central Valley cities or the Elm in the Eastern United States. etc

One of the greatest ironies of this whole controversy is that alternatives A and I seem to assume that the steep and hardly navigable slopes of the sierra can compete with the flat, highly mechanized tree farms of the Southeast United States in the production of wood pulp. In a much lesser contrast, the fruit industry of the foothills was lost to the easily manageable flat terrain of the Central Valley. The Sierra, John Muir's "range of light" will be greatly dimmed in order to supply paper goods for fast foods. Kleenex and toilet paper

Another irony is that the basic biological premise that all living things are interrelated can be so blithely skimmed over. Clear cutting ignores this truth. I would think that all foresters would have some basic animal biology in their education and probably much, much more. MY conclusion is that this must cause great anxiety among educated foresters who must feel helpless in a situation where policy-making is Political and is done at a higher governmental level. I can only ask that you do your best. I recently

viewed a National Geographic television program on the destruction of the Amazon jungle. It detailed the incredible complexity of animal and plant interaction from weevil to toucan to monkey that revolved around a single seed. I could visualize the audience shaking their heads in sorrowful disbelief at the destruction of a whole complex animal community from the elimination of just one tree specie. Then I realized that it could happen here.

Thoreau said. "We need to protect all from the vandalism of a few." That is why I support the "Citizens' Alternative"

Sincerely,



George Beland
Vice Mayor, City of Auburn

enclosures

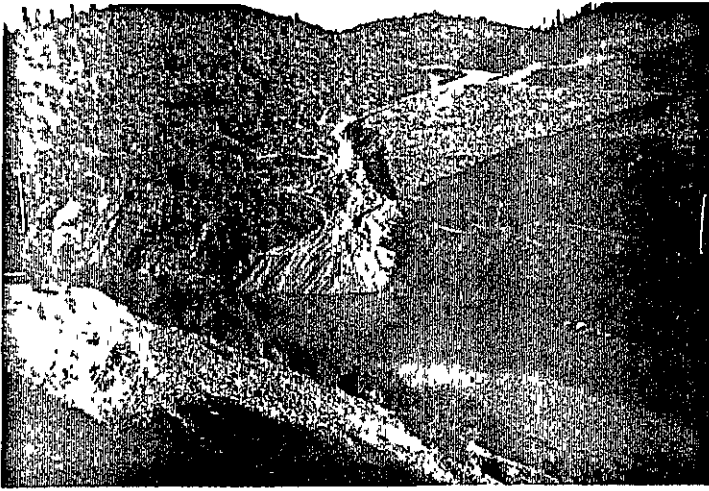
The two pages of pictures show erosion in the American River Canyon just above the coffer dam which was built for the construction of Auburn Dam. It is obvious that severe erosion occurs only with man's intrusion--clear-cutting and especially road construction. Although this was the greatest flood in history, there is no visible erosion in the undisturbed areas, even on sparsely vegetated slopes.

Photos by George Beland - need not return

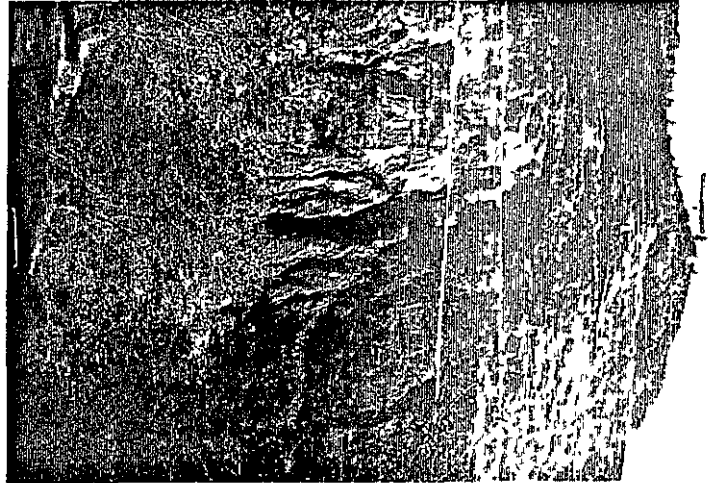
NO DISTURBANCE
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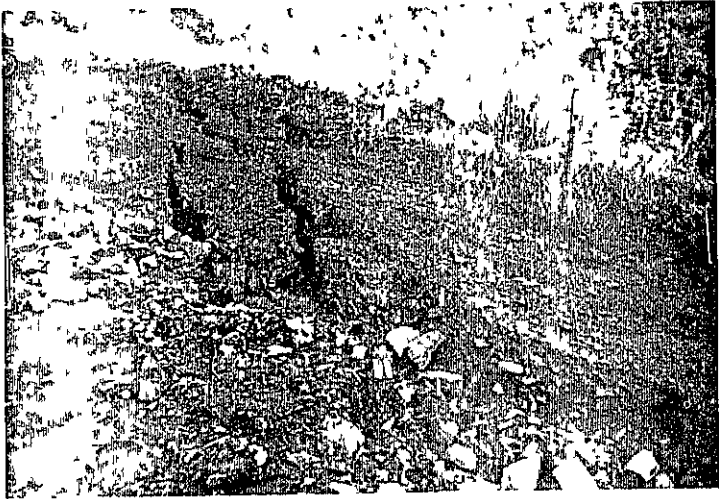
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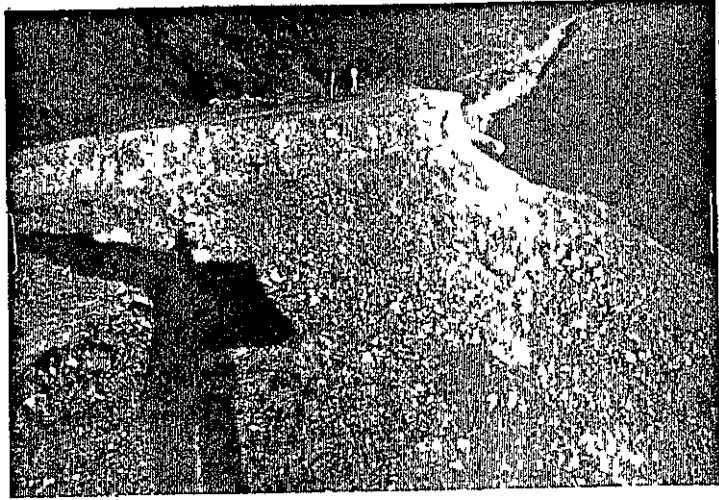
SLIDES AND EROSION BECAUSE OF
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ERODED ROAD



● ROAD SEVERED
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← BOAT
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+ ROAD IN
RIVER

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11,310

**CHIEF ADMINISTRATIVE OFFICE
COUNTY OF BUTTE**

25 COUNTY CENTER DR / OROVILLE CALIFORNIA 95965 3380 / (916) 534 4631



MARTIN J. NICHOLS
CHIEF ADMINISTRATIVE OFFICER

TAHOE NAT'L FOREST
MAY 11 1986
RECEIVED

MEMBERS OF THE BOARD
HASKEL A. MCINTURF
JANE DOLAN
HILDA WHEELER
ED McLAUGHLIN
LEN FULTON

May 8, 1986

Ms Geri Larson
Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, CA 95959

Dear Ms Larson

Please find attached Butte County Board of Supervisors Resolution 86-60 asking that the Forest Service recognize Butte County in the national forest ecosystem

Very truly yours,

Martin J. Nichols
Chief Administrative Officer

MJN/MP/cap

Encl



Resolution No 86-60

RESOLUTION REQUESTING THE U S FOREST SERVICE
RECOGNIZE BUTTE COUNTY IN THE TAHOE NATIONAL FOREST ECOSYSTEM

WHEREAS THE Tahoe National Forest has not heretofore recognized Butte County and the Oroville community as being significantly affected by decisions made during the national forest land management planning process, and

WHEREAS, the forest products industries constitute a significant component of the economic and social fabric of Butte County, by directly employing approximately 1,200 of its citizens, and

WHEREAS the economy of Butte County is further enhanced by those businesses and their employees which provides goods and services to those 1,200 workers and to the eight forest product manufacturing plants, and the various logging companies and trucking firms in Butte County, and

WHEREAS reduced timber harvest may have potentially significant adverse socioeconomic impacts on Butte County which have not been addressed in the draft environmental impact statement; and

WHEREAS the production of commodities from the national forest, including widespread opportunity for developed recreation, grazing of livestock, and mineral production, while preserving an acceptable level of amenity values, further enhance the economy of this community and contributes to the quality of life of its citizens

NOY. THEREFORE BE IT RESOLVED by the Butte County Board of Supervisors, state of California. as follows:

1 Butte County asks to be recognized as a Part of the Tahoe National forest environment, and that the socioeconomic impacts of reduced timber harvesting, particularly in the Oroville community be fully recognized and analyzed

BE IT FURTHER RESOLVED that copies of this resolution be forwarded to Mr Zane Smith, regional forester, and Mrs Geri Larson, forest supervisor, Tahoe National Forest

11,310

-2-

PASSED AND ADOPTED by the Board of Supervisors, County of Butte, this 6th day of May, 1986, by the following vote.

AYES Supervisor Dolan, Fulton, McInturf, Wheeler and Chairman McLaughlin
NOES None
ABSENT None
NOT VOTING None

Ed McLaughlin
ED McLAUGHLIN, Chairman of the
Butte County Board of Supervisors

ATTEST.

MARTIN J NICHOLS, Chief Administrative
Officer and Clerk of the Board

By C. J. Marshall, deputy

THE FOREGOING INSTRUMENT IS A CORRECT COPY OF
THE ORIGINAL ON FILE AND OF RECORD IN THIS OFFICE
ATTEST DATE 5/12/86
MARTIN J NICHOLS Clerk of the Board of Supervisors
in and for the County of Butte
State of California.
By [Signature] DEPUTY

3410

CHIEF ADMINISTRATIVE OFFICE
COUNTY OF BUTTE

25 COUNTY CENTER DR / OROVILLE CALIFORNIA 95965 3380 / (916) 534 4631



TAHOE NATIONAL FOREST

- MEMBERS OF THE BOARD
- HASKEL A McINTURF
- JANE DOLAN
- HILDA WHEELER
- ED McLAUGHLIN
- LEN FULTON

MARTIN J. NICHOLS
CHIEF ADMINISTRATIVE OFFICER

MAY 23 1986

RECEIVED

May 22, 1986

Geri B Larson, Forest Supervisor
Tahoe National Forest
Hwy 49 6 Coyote Streets
Nevada City, CA 95959

Dear Mr Larson

Re Lassen, Plumas and Tehama National Forest Land
and Resource Management Plan

The Butte County Board of Supervisors has had an opportunity to review, in part, and has received input regarding the Land and Resource Management Plans for each of the Lassen, Plumas and Tahoe National Forests

The Board of Supervisors has expressed their sincere concern about the plans in view of the emphasis placed on clearcutting. On behalf of the citizenry of Butte County, the Board of Supervisors hereby states its opposition to the use of clearcutting and asks your cooperation in amending the plans accordingly to insure a sustained yield timber supply

This is most important in insuring the existence of a natural forest

Very truly yours,
Martin J. Nichols

Martin J Nichols
Chief Administrative Officer

MJN/MP/rt

cc Zane G Smith, Regional Forester

cc Lassen
Plumas

OF NATION AT
MAY 4 1986

3661

3661

RESOLUTION NO 86-41

A RESOLUTION OF THE CITY COUNCIL
OF THE CITY OF LINCOLN REGARDING
THE TAHOE NATIONAL FOREST LAND
AND RESOURCES MANAGEMENT PLAN

WHEREAS, the City Council of the City of Lincoln hereby resolves to the land use allocations of Alternative (I). It is our belief that this alternative which keeps the largest acreage in multiple use will provide a larger land base to allow a variety of harvest methods to manage our National Forest we do not support a blanket policy of bare ground clear cutting but feel it is an important tool and should be used along with seed tree and shelterwood methods. and

WHEREAS, the Lincoln City Council feels Alternative (I) will best meet all the multiple uses while maintaining a strong local economy, county stability, employment opportunities, and provide the most uses to the general citizen. The timber industry has always been an important part of our economy and fits in well with the multiple use objectives. We do not feel the total economic impacts of the timber industry have been addressed in the planning process. The following objectives and a modified Alternative (I) is attached.

NOW, THEREFORE, BE IT RESOLVED that the Tahoe Land Management Plan must adopt the land allocations of Alternative (I), which provides the greatest benefits to the public by leaving acreage in multiple use.

PASSED AND ADOPTED this 13th day of May, 1986, by the following roll call vote:

AYES. COUNCILMEMBERS: LEWIS, MCCARTNEY, SHORT, KELLAR, STEFANI

NOES: COUNCILMEMBERS: NONE

ABSENT: COUNCILMEMBERS: NONE

Nello Stefani
Mayor

ATTEST:

Judith L. Stegwele
City Clerk

TIMBER ALTERNATIVE (I)

Capable lands	641,264	
Lands not available	18,246	wilderness
Lands not Suited	15,050	incompatible uses
Lands suited	613,968	
1) Timber (spec. cutting)	79,557	
a) aesthetics		-0-
b) watershed and sensitive soils	76,389	Stream side buffers and sensitive soils
c) wildlife		3,168
2) Timber (long rotation)	89,618	(150-200 year rotation)
a) aesthetics		79.276 scenic highways
b) watershed		18.342 Stream buffers
3) Timber (short rotation)	444,793	(70-100 year rotation)

11.309

TUHOE NATIONAL FOREST



MAY 19 1986

R.S.

(916) 741-6633

526 C Street ■ P O Box 150 ■ Marysville, CA 95901 ■

OFFICE OF THE MAYOR

May 15, 1986

Mrs. Geri B. Larson
Supervisor's Office
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, CA 95959

Dear Mrs Larson

At the regular meeting of Tuesday, May 6, 1986, the Marysville City Council discussed the proposed land management plans for the Plumas National Forest and the Tahoe National Forest

The Councilmembers are extremely concerned about the local economy--especially after the recent flooding in our community. Since timber-related industries in Yuba and Sutter Counties employ 1,100 people and contribute approximately \$35,000,000 to the local economy, any negative impact on the timber cutting in Tahoe National Forest would have a severe rippling effect on residents of the bi-county area. The value of the timber output from the Tahoe National Forest is important to our community's economic stability.

The Council voted unanimously to endorse Alternative I for the Tahoe National Forest because they feel it provides the maximum multiple-use benefits for all citizens, and the Council felt this Alternative would ensure sound management for our forests.

very truly yours,

Elisabeth A. Ahart
Elisabeth A. Ahart
City Clerk/Office Manager

eea/0215A

TAHOE NATIONAL FOREST
MAY 16, 1988

11,313

CITY OF OKUVILLE
RESOLUTION NO 4125

RESOLUTION AUTHORIZING AND DIRECTING CITY STAFF TO ADVISE FEDERAL AND STATE REPRESENTATIVES OF THE EFFECT OF THE PLUMAS AND TAHOE NATIONAL FOREST LAND MANAGEMENT PLANS ON THE CITY OF OROVILLE

BE IT HEREBY RESOLVED by the Oroville City Council. as follows

WHEREAS, the Plumas and Tahoe Land Management Plans, currently being circulated for public comment, essentially dismiss and then ignore the community of Oroville as being affected by the National Forest; and

WHEREAS, the socio-economic impacts Of forest use were not adequately considered for the community of Oroville; and

WHEREAS. the Oroville City Council encourages the management of the forest under multiple use concepts to produce consistently high levels of valuable commodities such as timber and motorized recreation, and

WHEREAS. nearly twenty percent (20%) of the City's General Fund Revenue is directly attributable to the timber and forest products Industry; and

WHEREAS. the necessity to maintain the timber and forest products industry is absolutely critical to the future growth and economy of the community of Oroville

NOW, THEREFORE, BE IT RESOLVED by the Oroville City Council, as follows:

1. City Staff is hereby authorized and directed to advise the Plumas National Forest, Tahoe National Forest. USDA Forest Service and Federal and State Representatives that the

11,313

City of Oroville believes that it is essential that the social and economic effects Of National Forest use on the entire community of Oroville be addressed in their Land Management Plans
2. City Staff is further authorized and directed to advise the aforementioned agencies and representatives that the Oroville Crty Council encourages the management of the forest under multiple use concepts to produce consistently high levels of valuable commodities such as timber and recreation

3 The City Clerk shall attest to the adoption of this Resolution.

PASSED AND ADOPTED AT a regular meeting on May 5, 1988 by the following vote:

- AYES. Roberts, Rossas, Sears, Streeter, Trinidad, Wilsc
- NOES: None
- ABSTAIN: None
- ABSENT Houseworth

Janet Wilson
Mayor

ATTEST

William R. Rindfleisch
City Clerk

APPROVED AS TO FORM:

Charles Lueder
City Attorney

TAHOE N ^o	
MAY 16 1988	
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TAHOE NATIONAL FOREST
1 2 1986

RESOLUTION NO. 906

3

1804

RESOLUTION OF THE CITY OF PORTOLA,
PLUMAS COUNTY, CALIFORNIA,
SUPPORTING MULTIPLE USE MANAGEMENT OF
THE TAHOE NATIONAL FOREST

WHEREAS, the City Council of the City of Portola has determined that sound management of the natural resources of the Tahoe National Forest is important to the economic and social well-being of our City; and,

WHEREAS, the decisions of the U.S. Forest Service Land and Resource Management Planning process will directly affect economic and environmental conditions of the citizens of the City of Portola. and,

WHEREAS, the people of the city of Portola depend on and enjoy the multiple uses of the natural resources of the Tahoe National Forest, which maximizes public outputs for all people. and,

WHEREAS, a number of the people of the City of Portola are dependent on jobs in the recreation and timber industries, and there are many businesses in the City which provide jobs as well as services and products to the recreation and timber industries, and,

WHEREAS, our county schools and roads receive 25% of the National Forest system revenues from timber sales, grazing, recreation and other land uses with the major portion derived from timber sale receipts. and,

WHEREAS, the City of Portola owes its continuing prosperity in large part to recreation, timber, and related industries.

NOW THEREFORE, BE IT RESOLVED by the City Council of Portola whose members call upon the U.S. Forest Service to recognize the economic benefits derived from multiple uses of the forest. and,

THAT the City of Portola supports a Land and Resource management plan that will balance forest resource production, using sound forest management while maintaining environmental protection: and,

THAT the Tahoe National Forest must expand the existing recreation Opportunities. and,

THAT the U.S. Forest Service must recognize that the City of Portola has schools, stores, churches, roads, railroads, and people which are an integral part of the forest environment; and,

THAT it is time for the U.S. Forest Service to develop a Plan that will preserve the multiple use concept; and,

THAT there should be no further expansion of the Wilderness System which locks up valuable timber and recreational resources that precludes their multiple use.

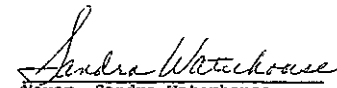
PASSED, APPROVED AND ADOPTED THIS 21st day of April, 1986 by the following vote

AYES: Councilmember Moore
Councilmember Spiva
Councilmember Roudebush
Mayor Waterhouse

NOES: Councilmember Pearson

ABSTAIN: None


ABSENT: None


Mayor, Sandra Waterhouse

ATTEST


City Clerk, Marsha L. Frerking

I, Marsha L. Frerking, City Clerk of Portola, do hereby certify that the foregoing Resolution was duly and regularly passed by the City Council of the City of Portola at a Regular Meeting and Public Hearing held on April 21, 1986.


City Clerk, Marsha L. Frerking

11,311

**City
of
YUBA CITY**

2 2 2 2 2 2 2 2 2 2

May 7, 1986

TAHOE NATIONAL FOREST
MAY 14 1986

Tahoe National Forest
ATTN. Mrs. Geri B. Larson
Supervisors Office
Highway 49 and Coyote Street
Nevada City, CA 95959

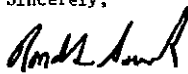
Dear Mrs. Larson

At their May 5, 1986 meeting, the City Council of Yuba City was asked to review "land allocation uses" for the Plumas and Tahoe National Forests, as part of the U.S. Forest Service's Land and Resource public input process.

The City Council reviewed the various alternatives for future land management in the Tahoe National Forest Plan and voted to support Alternative I, which it feels would allocate the most acreage for multiple-use management.

Please include the City Council's support for the above-mentioned plan alternative in your public review process.

Sincerely,



RONALD SOUTHARD
Mayor

RS/pmb

VIC FAZLINO
5TH DISTRICT CALIFORNIA
MAJORITY WHIP AT LARGE

RECEIVED
APR 18 1986



Congress of the United States
House of Representatives
Washington, DC 20515

April 12, 1986

SELECT COMMITTEE ON HUNGER
STANDARDS OF OFFICIAL CONDUCT
DEMOCRATIC STEERING AND POLICY
BUDGET
APPROPRIATIONS
COMMITTEES

Gert B. Larson, Forest Supervisor
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, CA 95959

Dear Ms. Larson

I am writing to comment on the Forest Service's Draft Plan for the Tahoe National Forest.

The Tahoe National Forest is an invaluable resource for some eight million Northern Californians -- approximately 530,000 of whom reside in my district. The Forest Service is charged with the substantial responsibility of considering the many divergent interests of this large population and I commend the Service for its efforts in that regard. I am, however, opposed to some aspects of the alternative the Forest Service has chosen for the Tahoe National Forest.

I am most concerned about the use of even-aged silvicultural systems -- or clearcutting -- as defined in the proposed draft plan. The clearcutting of up to 40 acres of forest at a time may be economically expedient in the short-term. It does produce evenly-aged trees which from a timber company's narrow perspective, is a managerial advantage. But over time clearcutting would severely harm the ecological, and hence, the economic integrity of almost a third of the Tahoe National Forest.

Completely striping a large area of trees eliminates not just the trees but the entire ecosystem on which regeneration depends. Moreover, problems, clearcutting causes erosion and damage to other values. Moreover, clearcutting necessitates recurrent application of herbicides and other chemicals to reduce competing vegetation and restore new forest.

While I am opposed to large-scale clearcutting anywhere in the Tahoe National Forest, I am particularly concerned about its practice on watersheds near rivers and streams on the slopes above the Wild and Scenic North Fork of the American River. In other areas of California, clearcutting has increased the turbidity and debris content of fragile waters, leading to long-term damage of many fresh water and anadromous fisheries. Further, the possibility of herbicide runoff into the streams of the Tahoe National Forest not only endangers that area's fish habitat, but can also affect the water supply of communities downstream.

844 B LINCOLN AVENUE
FARMERS CALIFORNIA 94533
(907) 426-4333

4811 CHEVROLET DRIVE, SUITE 503
SACRAMENTO, CALIFORNIA 95841
(916) 484-4174

117 WEST MAIN STREET
WOODLAND CALIFORNIA 95691
(916) 668-0921

THIS STATIONERY PRINTED ON PAPER MADE WITH RECYCLED FIBERS

PLEASE RESPOND TO

I would much prefer a forest management plan for the Tahoe to retain multi-level, all-aged aboveal ecosystems. Ideally, such a plan would include the select harvesting of single trees or small groups of trees without incurring undue damage upon the surrounding forest.

A related aspect of the draft plan about which I am concerned addresses the protection of roadless areas in the Tahoe such as Castle Peak-Mt. Lola, Grouse Lakes and the North Fork of the American River. I hope the Forest Service takes special care to ensure that the ecological integrity of these and other fragile and/or undeveloped regions of the Tahoe is retained whenever possible. For those areas which would, under the current draft plan, potentially be developed for alpine skiing, I would instead support the expansion of existing ski areas. There is, I understand, considerable opportunity for this in the Central Sierra and it could be done with less environmental damage and at lower cost than the creation of new ski facilities.

Also in regard to these natural areas, I applaud the Forest Service's plans to exchange holdings in Granite Chief, Grouse Lake, Castle Peak-Mt. Lola and parcels near the North Fork of the American River for land in other areas. In particular, I encourage the expeditious exchange of inholdings in Granite Chief owned by the Santa-Fe Timber Company, as mandated by the California Wilderness Bill.

Thank you for this opportunity for comment. I request that this letter be included as part of the public response to the draft plan.

Sincerely,
Vic Fazlino
VIC FAZLINO
Member of Congress

Ms. Gert Larson
April 12, 1986
Page 2

1421 LONGMONT HEIGHT
OFFICE BUILDING
WASHINGTON DC 20515
(202) 228-5718
SPECIAL PHONE FOR THE
HEARING IMPAIRED
TTY-202-228-1804

17/17

ROBERT T. MATSUI
THIRD DISTRICT CALIFORNIA

COMMITTEE ON
WAYS AND MEANS

TAHOE NATIONAL FOREST Congress of the United States
House of Representatives

JUN 4 1986

RECEIVED

Robert T. Matsui
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, CA 95959

Dear Ms. Larson:

I am writing to express my deep concern over proposals currently under review by the U.S. Forest Service that would potentially allow up to 40 percent of all the land in 13 timber-producing national forests in Northern California to be designated for commercial timber production.

As I understand the proposals currently under consideration, about five million acres of the 20 million acre national forest land total in California would be subjected to intensive clear cut logging and herbicide spraying.

The proposals are part of comprehensive plans for each of the national forests being drafted under the National Forest Management Act of 1976 (90 Stat. 2947). As you know, Congress adopted the law to provide for stricter guidelines for the management of all national forest resources largely in response to public outcry and criticism of some of the clear-cutting programs in the late 1960's.

One of the most important areas of these management plans is with respect to public involvement in the decision-making process. Legislative language in the 1976 law mentions at least 13 times the critical need for direct public involvement, participation and comment in the development of these national forest management plans.

I recognize it is an awesome, challenging task to draft management plans for 121 national forests that delicately balance the country's tremendous continuing need for wood and paper products with other vital, renewable resources and benefits which the national forests provide, such as recreation and natural beauty, wildlife habitat, livestock forage and water supplies.

As you know, the Forest Service is required to promote and ensure the use of timber harvesting methods which will protect the land and streams, assure rapid renewal of the forest, provide food and cover for wildlife and fish (many of which are endangered species) and have minimum impact on scenic and recreation values. In my view, clear cutting and chemical spraying are not compatible with any of these objectives.

20,452
WASHINGTON OFFICE
231 CANNON HOUSE OFFICE BUILDING
WASHINGTON DC 20515
(202) 225-7183
DISTRICT OFFICE
6058 FEDERAL BUILDING
650 CAPITOL MALL
SACRAMENTO CA 95814
(916) 551-2848

late

Ms. Geri B. Larson
Page 2

20,452

With respect to management plan proposals for the Tahoe National Forest, I have received a considerable number of letters from constituents and other concerned individuals regarding the Forest Service's preferred alternative, which would virtually double the current annual timber production yield and allow clear cutting on 432,000 acres of the forest's 800,000 acres of timber land.

I am requesting that the Forest Service adequately consider these and all other public comments during the review process for the draft management plan. I trust that the process will provide ample and sufficient opportunities for public comment and involvement so that these management plans, when finished, properly reflect public concerns regarding the environmental impact of clear cutting and herbicide spraying as well as the economic benefits of timber harvesting plans.

Also, I would like your assurance that there will be ample opportunity for appeal if, in the opinion of my Constituents and other concerned individuals, the Forest Service has not adequately addressed all of their concerns with regard to the management alternatives for the Tahoe National Forest.

In addition, my staff has been in contact with the House Agriculture Committee's Forests, Family Farms and Energy Subcommittee, which has jurisdiction over the U.S. Forest Service and its operations, to alert the panel of citizen concerns regarding the review process for national forests in California.

Thank you for your cooperation and interest in this issue. I will look forward to your earliest possible response.

Very truly yours,

Robert T. Matsui

ROBERT T. MATSUI
Member of Congress

RTM:dm

United States District Court
 Eastern District of California
 Sacramento, California 95814

20,453

Chambers of
 Thomas J. McFride
 Senior Judge

June 25, 1986

Ms. Geri B. Larson
 Forest Supervisor
 Tahoe National Forest
 Highway 49 and Coyote Street
 Nevada City, CA 95959

Dear Ms. Larson:

I am mindful of the fact that this letter comes to you *after* the deadline for comments on the new management plan for the Tahoe National Forest. I hesitated to write it for fear of being charged with being a judge acting outside of court to influence an executive decision. However, being somewhat personally involved, I felt I would be less than human if I didn't speak up in defense of something that is both near and dear to me, namely -- Lake Tahoe and the forests that surround it.

I have owned a home in Tahoe Pines for more than twenty-five years and spent almost every vacation up there for **Seven** years prior to the purchase of my first home. I have fished the streams and lakes and hiked and traveled the trails on both sides of the west shore watershed. During this period, I have observed the effect of clear cutting. In particular, I am referring to the clear cut that took place some years ago on the Barker Pass Road down to Barker Meadows. I will never see the pre-cutting beauty of that area again in my lifetime nor will my grandchildren ever see it.

I am of the opinion that all forests as close to the Lake as those in the area around Barker Peak and similar scenic areas around the Lake should be selectively rather than clear cut. I feel that all generations should enjoy the beauty of the Lake and its environs in their entirety while they are alive. I am against the concept of having bleak denuded patches interspersed through our National Parks even though the cost to loggers may be greater when they are required to selectively cut rather than clear cut their purchase.

TAHOE N.F.
 JUN 23 1986

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I believe that enjoyment of our National Forests and wilderness areas in an unblemished condition is what President Theodore Roosevelt had in mind when he encouraged the program of setting aside the vast areas of our National Forests for parks, recreation and for their enduring beauty.

Now that I have cast a Vote against your proposed Plan and possibly placed myself in your "bad graces". I feel rather presumptuous in asking for your help in an unrelated subject matter -- but I believe I am obliged to do so.

MY concern is Blackwood Creek, an important Stream that flows into Lake Tahoe.

MY lakefront home is located approximately 300 feet south of the mouth of Blackwood Creek. When I purchased the property in 1961, the lake bottom, from my shoreline to the end of my pier was covered with rocks and pebbles. There were always minnows over the pebbles and crayfish abounded in the rocky area. Moreover, the fishing off the end of the pier wasn't too bad. The depth of the water at the end of my pier was at least 9 or 10 feet when the Lake was full at the beginning of the summer. There was no mud or algae anywhere in sight from my pier and the pebbles on both sides of the pier were in sharp definition in clear blue water all the way out to the end of the pier. Blackwood Creek was important to fishing both from the standpoint of sportfishing as well as for a spawning stream for Lake trout.

About twelve to fifteen years ago, the Placer County Board of Supervisors granted to a gravel company, a special use permit to mine gravel in Blackwood Meadow and above -- all located in Blackwood Canyon. The gravel project involved moving Blackwood Creek out of the meadow and up against the mountain slope bordering the meadow on the south side. It also involved the construction of two large "so called" settling basins to prevent silt from their mining and crushing operations from filling in the creek bottom and thus destroying the sand and gravel bottom needed for spawning which had supplied trout to the Lake for untold centuries. The Tahoe Pines Improvement Association and the State Department of Fish and Game opposed the operation. Particularly the Department of Fish and Game claimed that the project would ruin Blackwood Creek as a spawning creek -- and they were right! I don't recall whether the Forest Service joined in the protest. What I

20,453

do recall -is that the settling basins didn't work. They broke out twice within three years, then the gravel company abandoned the project.

Before the creek was moved out of the meadows it meandered through the meadow and over and through the grasses and willows in the meadow and was thus "slowed down" in the Spring "runoff". The water that came out of the creek into the Lake was clean and free of rock, silt and debris. The gravel operation changed this completely.

Now, the Spring runoff comes straight down the mountain from the watershed and with nothing left to slow it down. It acts almost like a huge high pressure nozzle on the end of a larger pipe as it shoots along the south edge of the meadow valley cutting into the bank of the mountain against which it was diverted. The result is that trees of every size are washed into and across the creek and the dirt and rock that supported them washes into the creek and finally down to the mouth of the creek. In addition, uprooted stumps and pieces of broken tree end up at the mouth of the creek or are washed out into the Lake resulting in a hazard for boaters.

Charles Goldman, Professor of Limnology at the University of California at Davis has identified Blackwood Creek as the worst offender of all the streams and creeks that flow into Lake Tahoe from the standpoint of polluting the Lake. And I believe he also stated that most of this has taken place since construction of the gravel project.

I visited my Tahoe Pines home two weeks ago and for the first-time in the thirty odd years that I have been living on or near the water, I observed green algae all over the lake bottom in the shallow area that now fans out from the mouth of Blackwood Creek. I attribute this condition to the change in the flow of the creek caused by the gravel operation. When the dirt, gravel, rocks and logs reach the mouth of the creek, they drop out of the stream flow and clog the mouth of the creek. As a result, a delta has developed at the mouth of the creek which has reduced the normal depth of the water at the pier located there from almost fifteen feet to two to three feet when the lake is high. Moreover, the blockage of the creek has changed the direction and flow of the creek into the Lake so that instead of flowing

straight east into the Lake as it has for centuries, the flow is now diverted to the south carrying with it mud and sand that is then deposited on the Lake bottom extending out from the shoreline for a distance of at least 200 feet into the Lake. Each year, the depth of the Lake diminishes and instead of a gravelly and rocky bottom, there is now mud, silt, and sand. There are no longer any minnows or sport fish along the shoreline or near or under the piers. Moreover, the crayfish which normally dwell among the rocks are completely gone.

One hundred and fifty feet to the south of the mouth, there is another pier which, before the changes in the creek by the gravel operation began to take their toll, had eleven feet of water at its end when the Lake was full. Now it has no water or depending on the vagaries of the flow, it may have twelve to eighteen inches at most when the Lake is full. My own pier is approximately 150 feet further to the south. As I mentioned above, the southward outflow of the stream has raised the bottom at least two or three feet at the end of my pier. Until last year, the mud and sand damage seemed to stop at my pier, but this year the shallowing of the Lake bottom now extends beyond my pier and continues to destroy and raise the Lake bottom as it continues its southward encroachment. Rocks that were twelve to fourteen inches in diameter on the south side of my pier and were previously clearly exposed have now completely disappeared under the silt which has now also reached the next pier located approximately 150 feet to the south of mine.

Unless the conditions upstream from the mouth of the creek or the conditions of the mouth of the creek are changed and changed soon, I am convinced that eventually the west side of the Lake extending all the way from the mouth of Blackwood Creek down to and including the public beach at Grand Avenue in Tahoe Pines will be a huge mud flat. In addition to destroying the recreational use of this area, I feel certain that such condition can't help but degrade the water quality of the entire Lake.

Having said all of the above--is there anything that your department can do to correct or at least prevent the worsening of the problems that I have mentioned?

I am aware of the fact that the Forest Service did not acquire ownership of the properties bordering Blackwood Creek until after the events responsible for the damage had taken place. In fact, I am certain that if you folks had owned the property at the time the gravel company had made its application, you would have argued for its denial, but that is now past history. The present question is, what can be done to heal the wound.

I know that Congressman Vic Fazio is dedicated to the protection of the Lake. I feel certain that he would try to help you in any way that is economically feasible -- considering the budget restraints with which all government agencies (including the Courts) are presently faced.

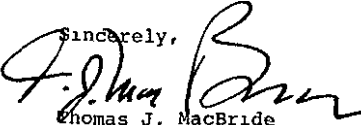
Inasmuch as the County of Placer issued the use permit over the objections of the residents of Tahoe Pines and the State Department of Fish and Game, possibly its present governing body may have some feelings of contrition on behalf of its predecessors and would be willing to help alleviate the situation.

Because the shallowness of the Lake now extends far out beyond the apparent mouth of the creek the Lake surface is deceiving to boaters. I have seen a number of boats "hang up" or ruin their propellers as they cross what appeared to be safe waters where in fact the water was extremely shallow with mud, gravel and rock that had been washed down from the creek. Shouldn't the Coast Guard or the U.S. Corps of Engineers have an interest in preventing accidents in the area which are so obviously "waiting to happen".

I don't know whether the forest service can share any of the blame for what has happened. but I do know that the material that is causing grievous damage to the Tahoe Pines waterfront area and the Waters of Lake Tahoe is coming from your property in a manner that was not intended by Mother Nature when she set up the plan for the ecological operation of the Lake.

I hope you can help correct the situation or suggest what can be done or who should be looked

to for help. I will be glad to assist in any way I can -- short of trying a case in my Court involving the problem. As it must be apparent from this letter -- I would be disqualified for the reason that I readily admit --that I could not be objective or impartial. I am too prejudiced in favor of Lake Tahoe

Sincerely,

Thomas J. MacBride

TJM/jdp

cc: Mr. Art Champ
U.S. Corps of Engineers
Sacramento

Congressman Vic Fazio

California Department of Fish and Game

George Sanders
Placer County Department of Public works

James L. Porter, Jr.
Attorney at Law

Christine DuFour
Editor, Tahoe World

Commander Robert W. Cathey
Twelfth Coast Guard District

Officer in Charge
Coast Guard Station Lake Tahoe

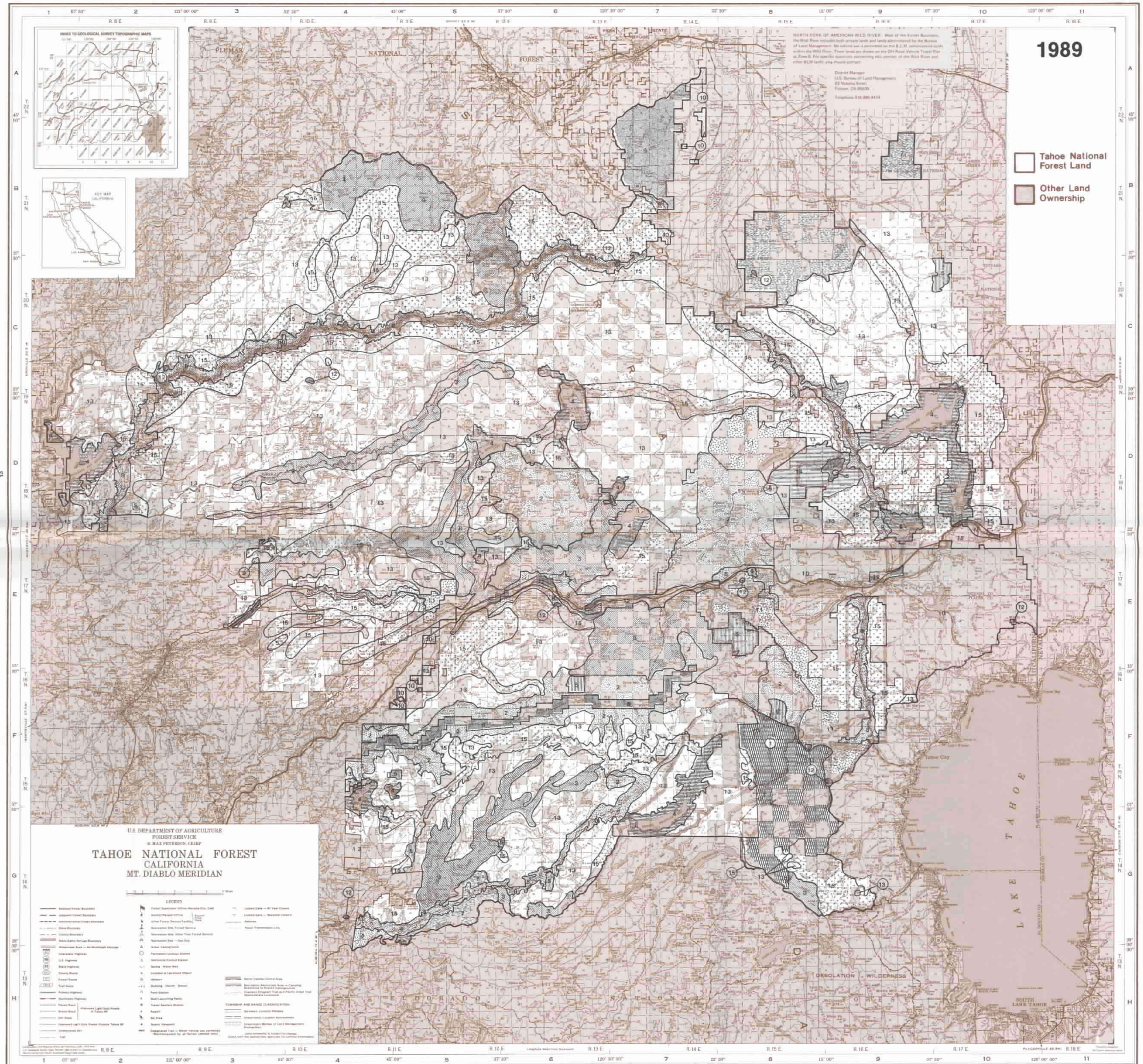
Tahoe National Forest

Final Environmental Impact Statement

Alternative PRF (Preferred)

Achieve a broad range of commodity and amenity benefits that meet short-term needs while retaining long-range management options. Emphasize a mixture of commodity production and amenity benefits that maximizes net public benefits while responding to the planning issues. Specific issues emphasized are forage, wood, and soils; recreation; and fish and wildlife habitat.

- | Map Symbol | Management Prescription (Theme) |
|------------|---|
| | 1 The theme is to manage the designated Granite Chief area as wilderness. Manage for dispersed recreation. Manage grazing under extensive use. This land is unsuited for timber production. |
| | 2 The theme is to retain a near-natural appearing forest environment while also producing some forage and water. Manage for dispersed, nonmotorized recreation. Grazing is permitted. Low standard roads may be developed for harvesting, but are closed to public vehicle use. Land is unsuited for regulated timber production. |
| | 3 The theme is to produce a moderate level of commodities while enhancing or emphasizing other selected resources. Manage for dispersed, motorized recreation. Allow regulated timber harvesting, subject to visual and recreation constraints and maintenance of stand production. Range will be extensively managed. Roads are developed to serve timber harvesting. |
| | 4 The theme is to provide water-oriented recreational opportunities. Manage for developed recreation use around reservoirs and lakes. Maintain and upgrade developed facilities. Maintain visual quality background for the recreation users. Allow vegetative management, including regulated timber harvest, only when compatible with recreation, visual objectives and maintenance of stand vigor. Provide interpretive services and facilities where appropriate. |
| | 5 The theme is to establish representative vegetation and geologic areas for scientific and educational research. Manage for research and special interest purposes. Other uses permitted when not in conflict with research objectives. Timber harvest would be unregulated. |
| | 6 The theme is to manage as a classified Wild River, in accordance with the North Fork American Wild River Management Plan and as stated in Section 10(a) of the Wild and Scenic Rivers Act of 1968. The fisheries will be managed as stated in the Cooperative Habitat Management Plan for the river. These lands are unavailable for forage and timber production and have been withdrawn from mineral appropriation since 1975. |
| | 7 The theme is to improve fish and wildlife harvest species habitat while producing other commodities. Allow grazing if not conflicting with wildlife. Restrict transportation use to meet wildlife objectives. Harvest timber on a regulated basis. |
| | 8 The theme is to retain a natural-appearing forest environment while also producing some timber, forage, and water. Manage for visual attractiveness as viewed from major travel routes. Allow uses compatible with adopted visual quality objectives. Provide interpretive services and facilities where appropriate. Allow regulated timber harvest. |
| | 9 The theme is to maintain watershed integrity. Manage for watershed protection and improvement. Allow other resource uses when compatible with water quality objectives. Provide no new developed recreation facilities. Stabilize those roads which contribute to the watershed degradation. Restrict off-road vehicle uses. Allow regulated timber harvest. |
| | 10 The theme is to maintain land and resource values necessary to retain a high value for exchange. The land is unsuited for regulated timber production. |
| | 11 The theme is to provide winter recreation opportunities. Manage for Nordic and Alpine ski potential with other compatible uses. Timber harvest would be unregulated in most areas. |
| | 12 The theme is to emphasize land uses for facilities such as pipelines, transmission lines, and administrative sites. Manage for primary use as allowed under special-use permit and administrative uses. Other compatible uses allowed. Timber harvest would be unregulated. |
| | 13 The theme is to intensively manage timber and forage resources. Emphasize regulated timber production, utilizing even-age or uneven-age silvicultural systems on available, capable, and suitable lands. Grazing would be managed under both intensive and extensive systems. |
| | 14 The theme is to provide areas for cooperative studies emphasizing wildlife and timber resource management relationships. Manage for fish and wildlife cooperative research and a regulated flow of timber products. Maintain the existing water quality and flow needs for aquatic ecosystem research. |
| | 15 The theme is to manage for a predominantly natural-appearing landscape and late successional wildlife habitat, using a full range of timber management practices. Includes some acres of prescription 13, scattered above 5,500 feet in mixed conifer strata, in locations determined neither highly scenic nor visually sensitive by project-level analysis. |



Land status is correct as of January 31, 1984. Subsequently land may be acquired or exchanged. Any acquired lands will be managed in accordance with the management prescriptions for the area within which they occur.

Forest Plan directions do not apply to private lands.

Tahoe National Forest

Final Environmental Impact Statement

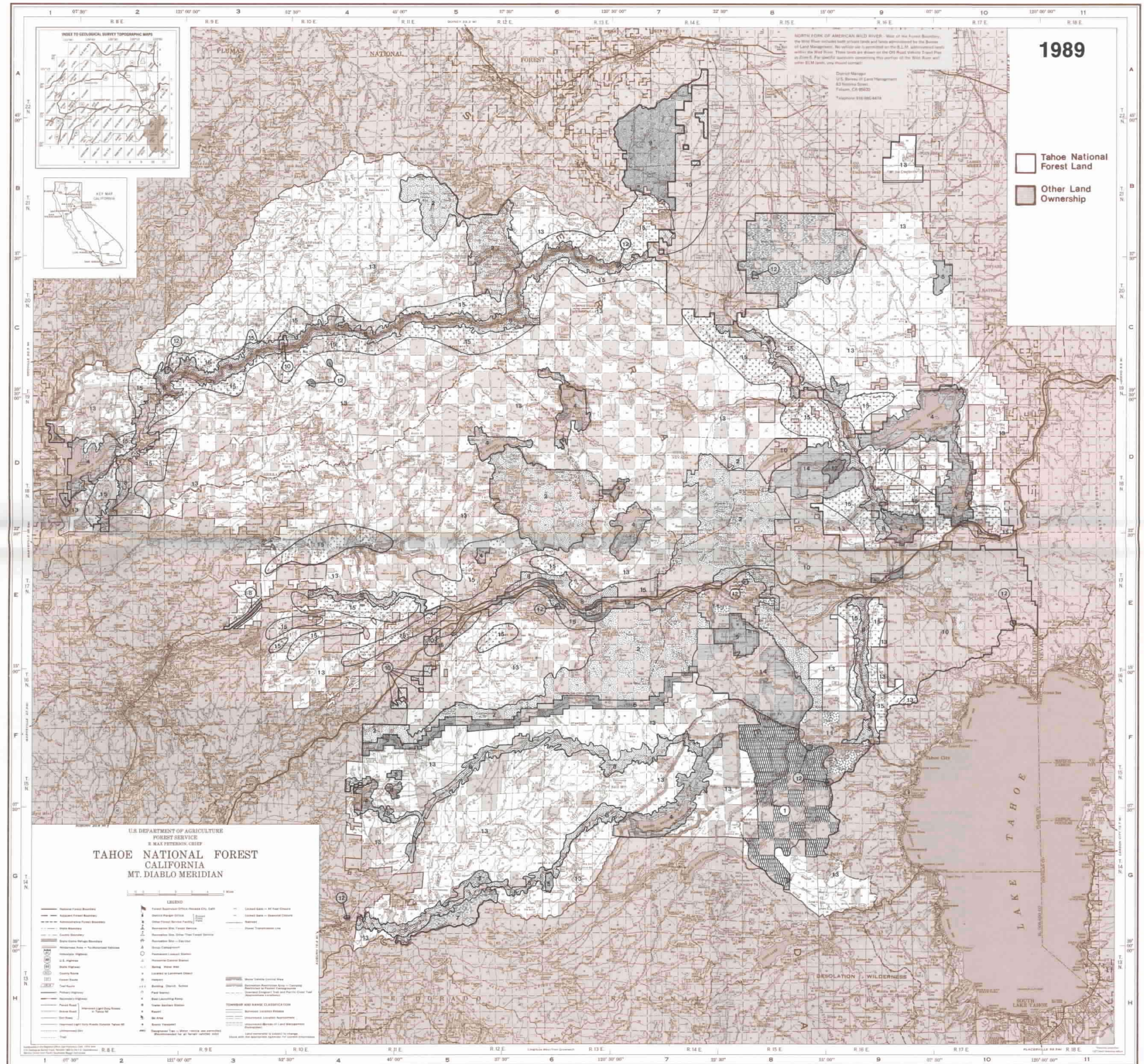
Alternative RPA (1980 RPA)

Achieve the TNF's share of the 1980 RPA Program as defined in the Pacific Southwest Regional Guide. These Program targets are discussed in each resource element below.

Emphasize a mixture of commodities and amenities that meets the assigned targets.

Specific issues emphasized are facilities; forage, wood, and soils; recreation; and fish and wildlife habitat.

- | Map Symbol
Prescription Number | Management Prescription
(Theme) |
|-----------------------------------|--|
| | 1 The theme is to manage the designated Granite Chief area as wilderness. Manage for dispersed recreation. Manage grazing under extensive use. This land is unsuited for timber production. |
| | 2 The theme is to retain a near-natural appearing forest environment while also producing some forage and water. Manage for dispersed, nonmotorized recreation. Grazing is permitted. Low standard roads may be developed for harvesting, but are closed to public vehicle use. Land is unsuited for regulated timber production. |
| | 3 The theme is to produce a moderate level of commodities while enhancing or emphasizing other selected resources. Manage for dispersed, motorized recreation. Allow regulated timber harvesting, subject to visual and recreation constraints and maintenance of stand production. Range will be extensively managed. Roads are developed to serve timber harvesting. |
| | 4 The theme is to provide water-oriented recreational opportunities. Manage for developed recreation use around reservoirs and lakes. Maintain and upgrade developed facilities. Maintain visual quality background for the recreation users. Allow vegetative management, including regulated timber harvest, only when compatible with recreation, visual objectives and maintenance of stand vigor. Provide interpretive services and facilities where appropriate. |
| | 5 The theme is to establish representative vegetation and geologic areas for scientific and educational research. Manage for research and special interest purposes. Other uses permitted when not in conflict with research objectives. Timber harvest would be unregulated. |
| | 6 The theme is to manage as a classified Wild River, in accordance with the North Fork American Wild River Management Plan and as stated in Section 10(a) of the Wild and Scenic Rivers Act of 1968. The fisheries will be managed as stated in the Cooperative Habitat Management Plan for the river. These lands are unavailable for forage and timber production and have been withdrawn from mineral appropriation since 1975. |
| | 7 The theme is to improve fish and wildlife harvest species habitat while producing other commodities. Allow grazing if not conflicting with wildlife. Restrict transportation use to meet wildlife objectives. Harvest timber on a regulated basis. |
| | 8 The theme is to retain a natural-appearing forest environment while also producing some timber, forage, and water. Manage for visual attractiveness as viewed from major travel routes. Allow uses compatible with adopted visual quality objectives. Provide interpretive services and facilities where appropriate. Allow regulated timber harvest. |
| | 9 The theme is to maintain watershed integrity. Manage for watershed protection and improvement. Allow other resource uses when compatible with water quality objectives. Provide no new developed recreation facilities. Stabilize those roads which contribute to the watershed degradation. Restrict off-road vehicle uses. Allow regulated timber harvest. |
| | 10 The theme is to maintain land and resource values necessary to retain a high value for exchange. The land is unsuited for regulated timber production. |
| | 11 The theme is to provide winter recreation opportunities. Manage for Nordic and Alpine ski potential with other compatible uses. Timber harvest would be unregulated in most areas. |
| | 12 The theme is to emphasize land uses for facilities such as pipelines, transmission lines, and administrative sites. Manage for primary use as allowed under special-use permit and administrative uses. Other compatible uses allowed. Timber harvest would be unregulated. |
| | 13 The theme is to intensively manage timber and forage resources. Emphasize regulated timber production, utilizing even-age or uneven-age silvicultural systems on available, capable, and suitable lands. Grazing would be managed under both intensive and extensive systems. |
| | 14 The theme is to provide areas for cooperative studies emphasizing wildlife and timber resource management relationships. Manage for fish and wildlife cooperative research and a regulated flow of timber products. Maintain the existing water quality and flow needs for aquatic ecosystem research. |
| | 15 The theme is to manage for a predominantly natural-appearing landscape and late successional wildlife habitat, using a full range of timber management practices. |



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Tahoe National Forest

Final Environmental Impact Statement

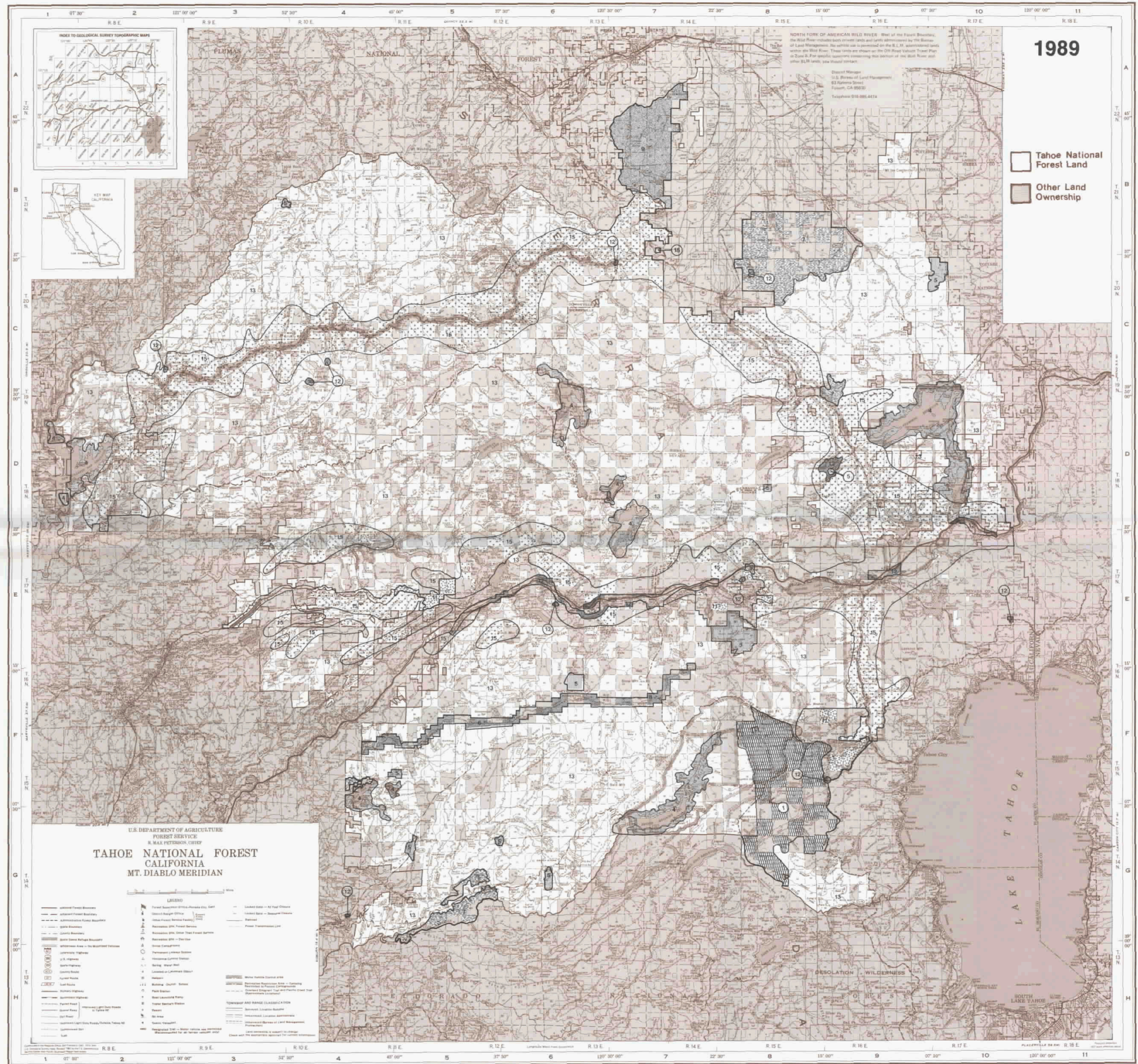
Alternative CMD (Commodity)

Achieve high timber commodity outputs while providing amenity benefits at economically efficient levels.

Emphasize intensive management of the timber resource on forest lands capable of producing at least 20 cubic feet of timber per acre per year. Resolve in favor of the timber resource any conflicts with other commodity or amenity resources.

The specific issue emphasized is forage, wood, and soils.

- | Map Symbol
Prescription Number | Management Prescription
(Theme) |
|-----------------------------------|--|
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1989

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Tahoe National Forest

Final Environmental Impact Statement

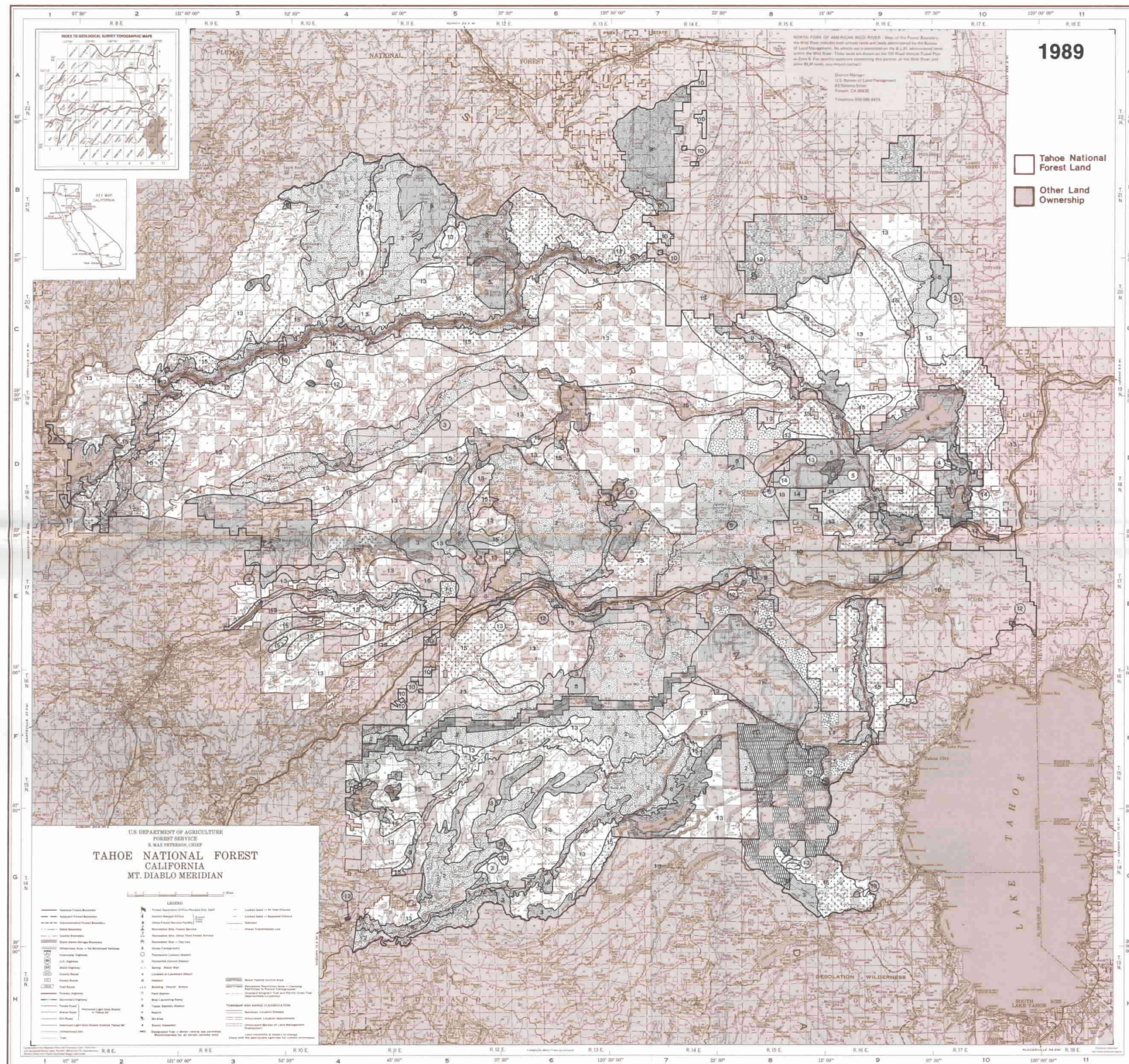
Alternative NMK (Nonmarket)

Achieve high output levels of amenity (nonmarket) resources with commodity (market) outputs at a production level that will not result in environmental degradation.

Emphasize amenity resources, such as fish and wildlife, water quality, and recreation. Resolve in favor of the amenity resources any conflicts with market resources.

Specific issues emphasized are water; recreation; and fish and wildlife habitat.

Map Symbol	Management Prescription
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Tahoe National Forest

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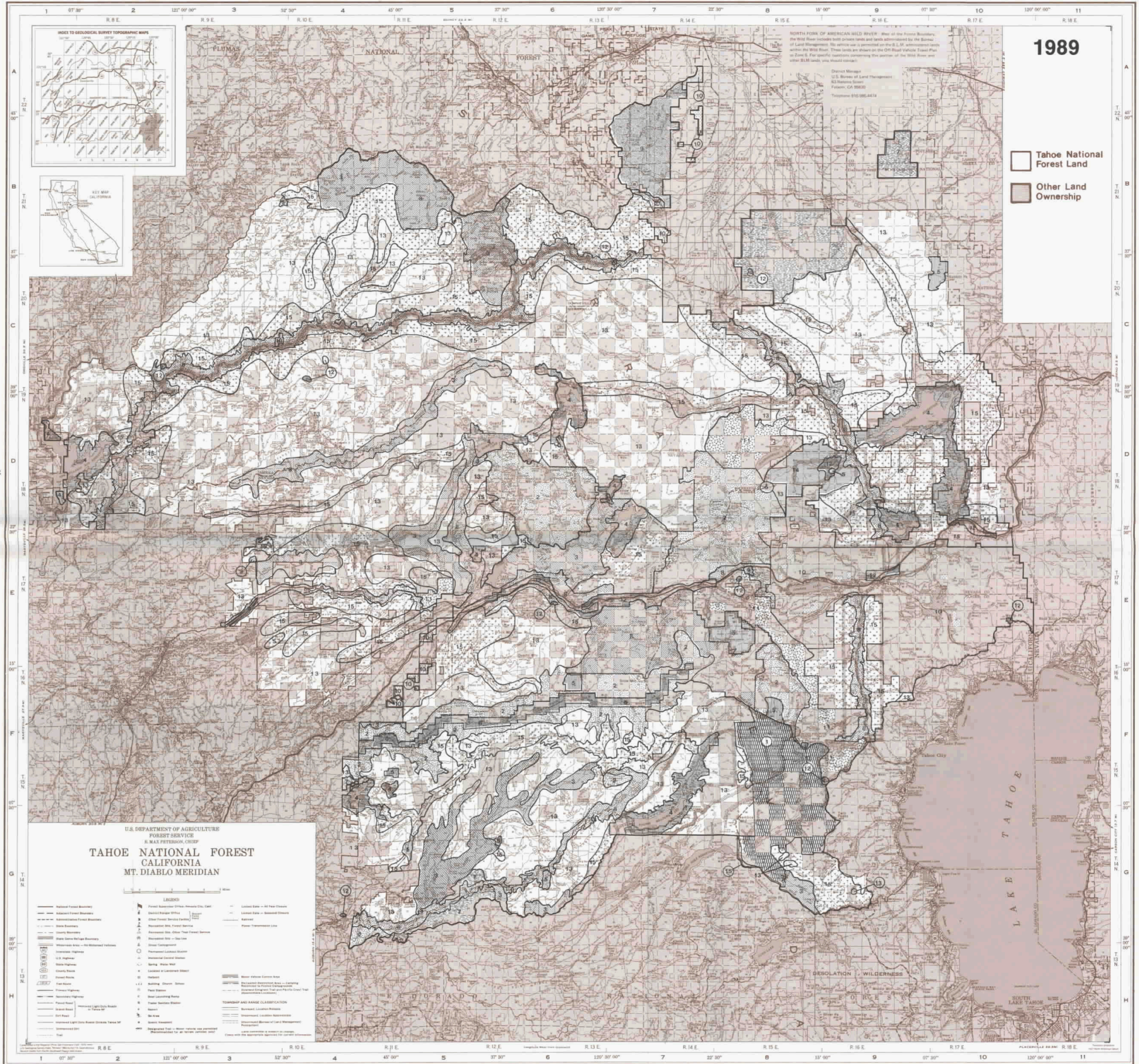
Alternative UNE (Uneven-Age)

Achieve a broad range of commodity and amenity benefits that meet short-term needs while retaining long-range management options. Apply uneven-age management as the principal method for regulating lands suitable for timber production.

Emphasize a mixture of commodity production and amenity benefits that maximizes net public benefits while responding to the planning issues. Specific issues emphasized are forage, wood, and soils; recreation; and fish and wildlife habitat.

Map Symbol Prescription Number Management Description (Theme)

- | | | |
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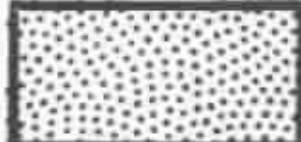



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Tahoe National Forest

Land and Resource Management Plan

Recreation Element Visual Quality Objective

Legend

-  Preservation
-  Retention
-  Partial Retention
-  Modification

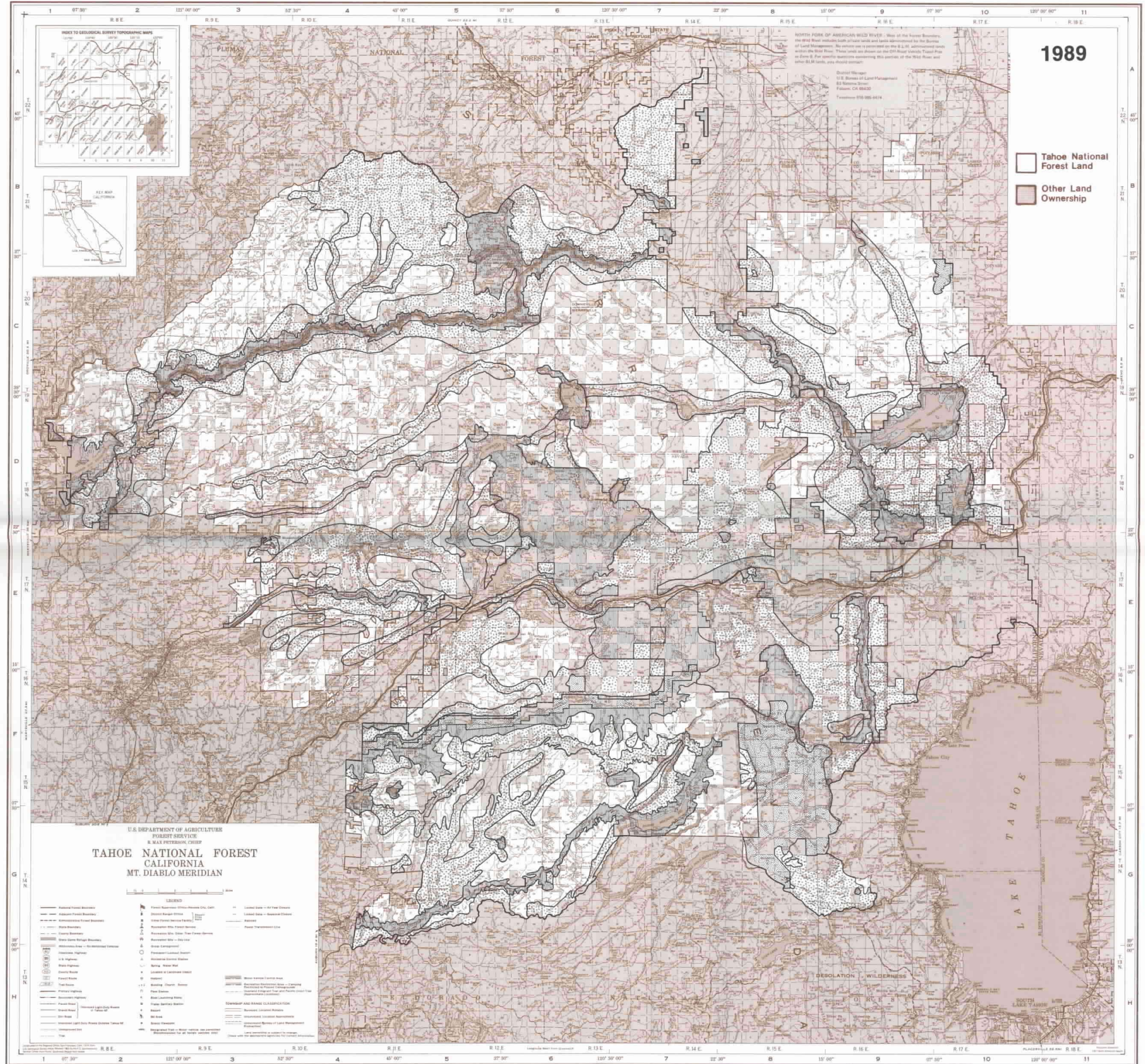
NARRATIVE

The visual quality objective (VQO) boundaries represent a transition from one set of goals, constraints, and related management direction to another. These transition boundaries are flexible; i.e., the actual application of objectives and prescriptions may, in some cases, cross VQO boundaries.

In some cases, this transition is from an area assigned a retention VQO (Forestwide S&G 17) to one assigned a modification VQO (Forestwide S&G 19). The retention objective is generally assigned to foreground landscapes along major travel routes or adjacent to recreation sites. Since the direction in the retention VQO applies to only the foreground, views that extend beyond the foreground area could, according to management area direction and the VQO element map, include altered landscapes dominated by the effects from management activities. These effects, especially when viewed in middleground zones, would decrease the overall visual quality of the viewshed and many of the visual resource benefits for maintaining the natural appearance of the foreground. Consequently, in such cases where views extending beyond the limits of the retention area would be influenced by an activity or practice, the project level analysis will examine the consequences of the proposal with respect to visual quality. This project analysis will examine the effects of visual quality in relation to the social, economic, and future management opportunities foregone by constraining the proposal.

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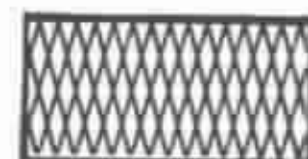



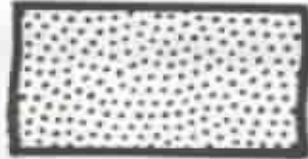


Tahoe National Forest

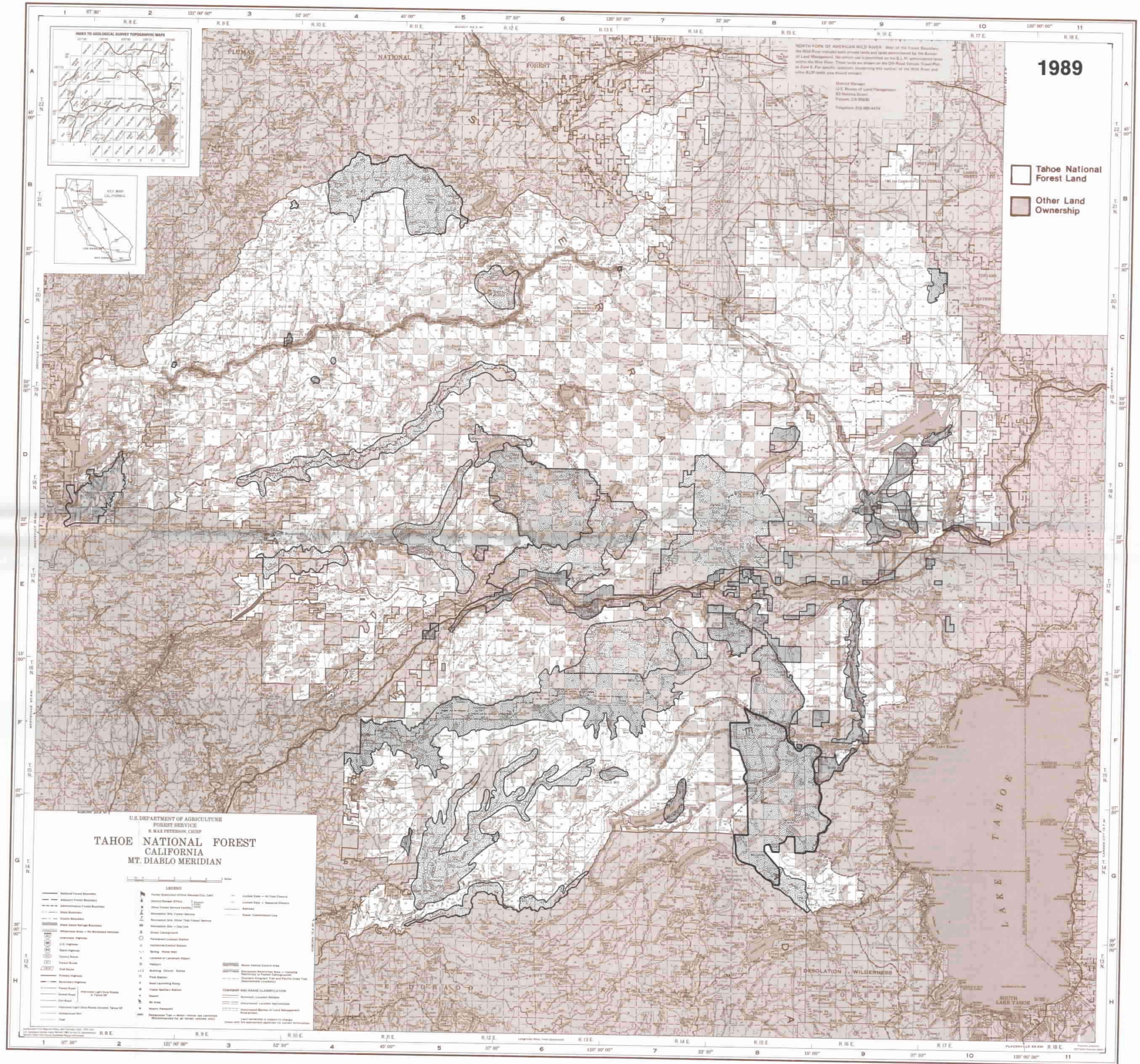
Land and Resource Management Plan

Recreation Element Recreation Opportunity Spectrum

Legend

-  Urban
-  Rural
-  Roaded Natural
-  Semiprimitive Motorized
-  Semiprimitive Nonmotorized

Note: No areas on the Tahoe National Forest were inventoried as "Primitive" ROS because of the distance criteria. Therefore, this map shows areas such as Granite Chief Wilderness and the North Fork American River Wild and Scenic River as SPNM, even though they will be managed for "Primitive" values.



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Tahoe National Forest

Land and Resource Management Plan

Transportation Element Travel Plan for Off Road Vehicles

Legend

	Travel Over Land	Travel Over Snow
	Open	Open
	Designated Route Only	Open
	Designated Route Only	Designated Route Only
	Designated Route Only	Closed
	Closed	Open
	Closed	Closed



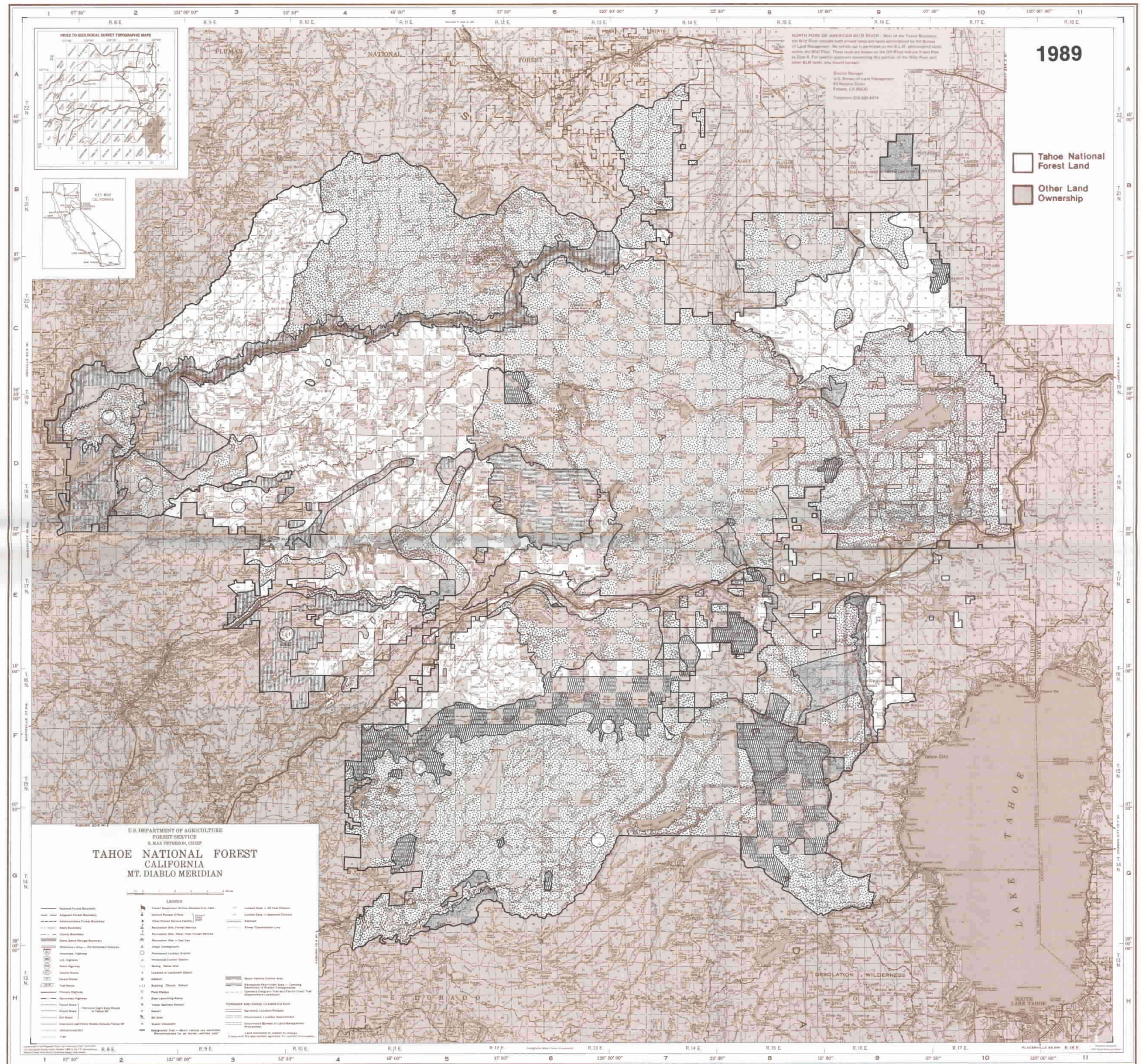
Seasonal Restrictions - Designated Route Only. Dates may vary depending on resource conditions.

Pacific Crest Trail, Closed To Off Road Vehicles

Designated Routes are routes over which certain types of off-road vehicles (ORVs) are authorized to travel.

Within the areas designated as open there are trails or areas that are restricted for ORVs. These trails or areas shall be posted on the ground. Specific information is available at the appropriate Ranger Station.

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United States
Department of
Agriculture

Forest
Service

Pacific
Southwest
Region

Tahoe
National
Forest



Tahoe National Forest Land and Resource Management Plan



----- NOTICE -----

THE ASQ OF 142.3 MILLION BOARD FEET (MMBF) REFERRED TO IN THE PREFERRED ALTERNATIVE, HAS BEEN CHANGED BY THE REGIONAL FORESTER TO 129 MMBF. SEE THE RECORD OF DECISION FOR DETAILS.

**TAHOE NATIONAL FOREST
LAND AND RESOURCE MANAGEMENT PLAN**

1990

Pacific Southwest Region

USDA Forest Service

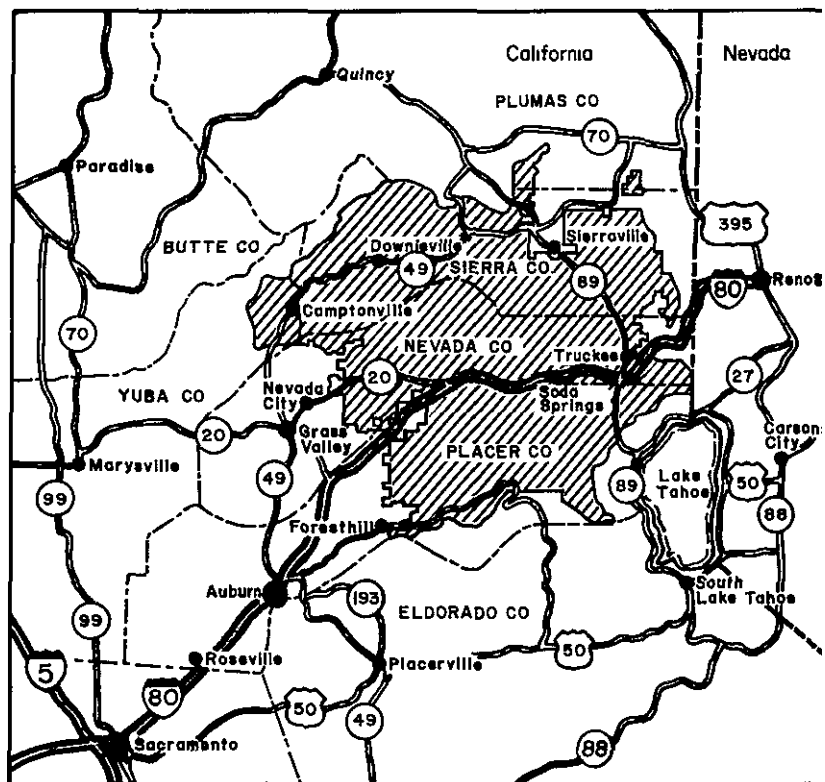
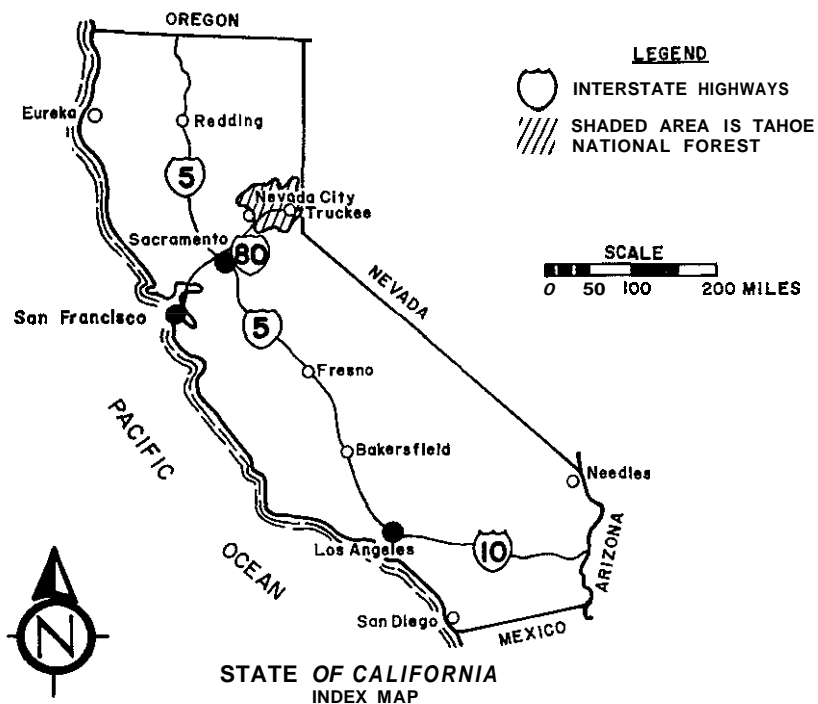


GERI V. BERGEN
Forest Supervisor

PAUL F. BARKER
Regional Forester

**This is a Plan for managing the Tahoe National Forest
for the next ten to fifteen years, after which it must be revised.
If the need arises, it will be revised or amended earlier**

Figure 1: Vicinity Map



TAHOE NATIONAL FOREST INDEX MAP

SCALE IN MILES
 0 5 10 15 20 40

United States
Department of
Agriculture

Forest
Service

Tahoe
National
Forest

Highway 49
and Coyote Street
Nevada City, CA 95959

March, 1990

Dear Friend of the Tahoe.

Several years ago, we embarked on an exciting Journey called the Forest planning process. We promised that by journey's end, we would not only be able to describe the resources on today's Tahoe, but also predict how the Forest would look and function in the future. Hundreds of people like you helped us along the way. Today, we are proud to be able to share with you the record of our journey (the Final Environmental Impact Statement) and the blueprint that will guide us over the next 10-15 years (the Forest Plan) Before we begin, we'd like to give you some background on our Forest and on the planning process.

The Tahoe National Forest is *unique* because of its many valuable resources and its proximity to the urban populations in northern California and western Nevada. Eight million people live within a 4-hour drive of the Tahoe, making it one of the busiest recreation Forests in the Nation. At the same time, the western slope of the Tahoe contains some of the country's most productive timberlands and is therefore an important source of timber. Quality water, which can be both scarce and precious in the West, is among the Tahoe's most valuable assets. The headwaters of the Yuba River system and the North Fork and Middle Fork American Rivers lie within the Tahoe, as does a large portion of the Truckee River watershed.

The Tahoe, like other National Forests, is committed to practicing professional multiple use management while staying sensitive to public needs. Our job is complicated by the fact that the public rarely speaks in a single voice. People's needs vary tremendously depending on how they use the Forest. Some people think of the Tahoe in terms of a livelihood such as logging or livestock raising, while others view the Forest as a sanctuary, a place where they can get away from it all. As forest managers, we are asked to balance these interests, even when they conflict. The planning process gave us a chance to air the issues, and gave you, the Forest users, a chance to speak out about how you want the Forest to function in the years ahead.

The comments we received (over 12,000 letters) in response to our Draft Environmental Impact Statement (DEIS) and Plan clearly told us that you wanted a change in management direction on the Tahoe. Most of you said we should place a greater emphasis on providing quality recreation opportunities, maintaining visual quality, and protecting soil and water. Clearcutting and future management of unroaded areas were also major concerns. The issue of forest diversity was important to many people, as was the need to provide habitats for a wide variety of wildlife and fish species. The controversy about how to provide adequate habitat for the spotted owl was especially important in this round of planning.

As a result of listening to your concerns, we have made a number of significant changes in the Final EIS and Plan. For example, we have developed new standards to protect our riparian areas and streamside zones, safeguard visual quality, protect our hardwoods, and maintain long-term soil productivity. The new timber management standards will enhance wildlife habitat by requiring that snags and down logs are left after logging. Post-sale treatments such as slash disposal and site preparation for planting have also been modified. We are planning to do less broadcast burning than in the past to ensure that enough cover is left to protect the soil. We will now burn only where we are sure we can protect soil quality.

The way we harvest timber will also change as a result of the planning process. The Final Plan, for instance, calls for fewer acres of clearcutting than the Draft EIS and Plan proposed. Instead, we will manage more acres under the uneven-aged and shelterwood systems, which involve cutting only one or a few trees at a time, or leaving seed trees on the site.

We will continue to manage the Granite Chief for its wilderness properties as specified in the California Wilderness Act of 1984. Other roadless areas that were not designated as wilderness will be managed for a variety of uses, depending on the attributes of the land. In highly scenic areas, for instance, recreation will be our top priority, while timber management will be emphasized in areas that are well-suited to growing trees.

*When we look into the future, we can envision a steadily rising demand for the limited supply of resources on the Tahoe. The challenge will be to provide a reliable flow of commodity resources without endangering the health or beauty of the Forest ecosystem. To meet this challenge, the Forest Plan renews our commitment to **qualify** forest management – a balanced approach that honors all values and tries to integrate all resource uses.*

Although the Forest Plan provides us with general direction for managing the Forest, it does not make site-specific project decisions nor does it set specific resource outputs. When it comes time to design on-the-ground projects such as timber sales, road and trail building, wildlife habitat improvements, or recreation developments, we'll begin by consulting the Forest Plan. Before we take any action, however, we'll thoroughly evaluate the project using the environmental analysis process described in the National Environmental Policy Act of 1969. This analysis may lead to an environmental assessment, an environmental impact statement, or a categorical exclusion, which, in turn, may lead possibly to an amendment or revision of the Plan.

*Although we worked long and hard on the Plan, we realize that it is a living document that can be changed. I, as Forest Supervisor, may choose to revise the Plan whenever conditions or demands in the area covered by the Plan change significantly, or when shifts in national policies, goals, or objectives have a significant effect on Tahoe programs. At the very least, the National Forest Management Act requires **us** to revise the Plan once every 15 years.*

*You will, of course, be notified whenever we are considering a change in the Forest Plan. **You** will also be invited to participate in the planning process for each project we undertake. We appreciate your interest in the Tahoe and the way our public lands are managed. Your comments and suggestions are always welcome.*

Sincerely,



GERI V. BERGEN
Forest Supervisor

TAHOE NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN

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View on Sierra Buttes, 1914

CHAPTER I

OVERVIEW

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I. OVERVIEW

WELCOME TO THE TAHOE NATIONAL FOREST

Vicinity

The Tahoe National Forest (TNF) is located in the north central Sierra Nevada mountains in California. The TNF is bounded on the north by the Plumas National Forest, on the east by the Toiyabe National Forest and Lake Tahoe Basin Management Unit, and on the south by the Eldorado National Forest.

Interstate Highway 80 crosses the central part of the TNF and provides primary access across the Sierra Nevada.

The TNF includes land in the Counties of Nevada (**169,116** acres), Placer (**241,229** acres), Plumas (**11,313** acres), Sierra (**352,222** acres), and Yuba (**20,494** acres). The administrative boundary encompasses **1,175,535** acres. Of this total, **381,161** acres are in other ownerships in an alternate section (checkerboard) pattern. Approximately **253,425** acres (**32** percent) of the remaining **794,374** acres of National Forest System lands have been acquired through purchase, donation, or exchange within the past 50 years.

The TNF is divided into five administrative units called Ranger Districts: Downieville (**212,640** acres), Foresthill (**155,975** acres), Nevada City (**140,928** acres), Sierraville (**164,049** acres), and Truckee (**120,782** acres).

The Lake Tahoe Basin Management Unit (LTBMU) was formed in **1973** by Presidential proclamation to provide special protection for the unique features of Lake Tahoe and its watershed. A portion of the TNF (**28,833** acres), along with portions of the Toiyabe and Eldorado National Forests, comprise the LTBMU. The LTBMU is not covered by this Forest Plan, although it is still legally part of the TNF. Further mention of the TNF will not include those lands in the LTBMU.

Landform

The elevation of the TNF ranges from about **1,200** feet above sea level in the west to over **9,000** feet along the crest of the Sierra Nevada. Many of the higher slopes and peaks have been glaciated, exposing the hard underlying rock materials with glacial moraines formed along the adjacent slopes and valleys. These landforms are observed in the Sierra Buttes-Gold Lakes area and around Donner Summit. The western two-thirds of the TNF tilts to the west, exhibiting nearly uniform flat ridges dissected by westerly flowing streams.

Climate

The TNF experiences a typical Mediterranean-type climate: warm, dry summers alternate with cool, wet winters. Overall precipitation on the TNF is moderate. Average annual precipitation varies from about 50 inches near the TNF's western boundary to 80 inches at the 6,000-foot level. East of the Sierra Nevada crest, precipitation decreases dramatically to approximately **35** inches per year near Truckee and **20** inches per year near the California/Nevada State line. Most precipitation occurs between November and May in the form of snow on the east side of the Sierra Nevada crest and above **5,000** feet elevation on the west side. Thunderstorms are common during the summer on the east side of the crest and at higher elevations on the west. The west side has extended drought periods at lower elevations.

Historic Interest

The western slope of the TNF contains an old and important mining district called the Northern Mines, which has numerous historic mining sites. The development of these mines and construction of townsites created a demand for sawtimber. In **1869**, timber harvesting increased because of the access provided by the Central Pacific Railroad. This early demand for sawtimber resulted in a large portion of the TNF

being harvested. Because of this harvesting, much of the TNF is in young growth stands of timber about **80 to 90** years old.

Recreation

Recreation use is high on the TNF because many areas of high scenic beauty and recreational appeal are located within a short travel distance of the metropolitan areas of Reno, Sacramento, and San Francisco. An estimated **8** million residents live within a 4-hour drive from the TNF. Some features of special interest that attract visitors to the TNF include: Placer County Grove of Sierra Redwoods, North Fork American Wild River, Granite Chief Wilderness, Donner Camp, the historic emigrant route from Verdi to the Sacramento Valley, and numerous ski areas and reservoirs. Demands for these and other areas creates conflicts in the TNF for camping, picnicing, swimming, off-highway vehicle use, hiking, winter sports, hunting, and fishing.

The *proximity* to large, spreading urban populations also increases the use of National Forest System lands for rights-of-way for power, phone, and water lines, fuelwood, access roads, and timber harvesting.

ORGANIZATION OF THE FOREST PLAN

The Tahoe National Forest Land and Resource Management Plan provides direction for managing the Tahoe National Forest for the next 10-15 years. The Forest Plan is composed of eight chapters, appendices, and a map packet:

CHAPTER I, OVERVIEW, describes the Tahoe National Forest and explains how this Forest Plan is organized.

CHAPTER II, INTRODUCTION describes the purpose and legislative background of the Plan, explains how the Plan relates to the **EIS** and other documents, identifies areas not changed by the Forest Plan, and discusses how this plan will be implemented. It also displays a table of average annual outputs for **1990 to 1999**

CHAPTER III, SUMMARY OF THE ANALYSIS OF THE MANAGEMENT SITUATION, briefly describes the current management direction, supply or production capability, existing and projected demands for Forest goods and services, and the need or opportunity for changes in current management direction. The detailed analysis of the management situation is available for review at the Forest Supervisor's office in Nevada City. (Analysis of the Management Situation, TNF, July **1985**).

CHAPTER IV, PUBLIC ISSUES, CONCERNS, AND OPPORTUNITIES SUMMARY, summarizes the process used to identify public issues, management concerns, and resource use and development opportunities. It also discusses how each issue, concern, or opportunity is resolved or disposed of in the Forest planning process.

CHAPTER V, MANAGEMENT DIRECTION, presents both Forestwide and area-specific management direction for the TNF. The Forestwide management direction consists of Forest goals and desired future conditions, objectives, and Forestwide standards and guidelines. More specific management direction for each of the 106 management areas includes: management emphasis for the area, selected standards and guidelines, and compatible available management practices. This direction helps resource managers set priorities and specifies where, when, how much, and under what conditions certain activities or conditions may occur in that management area. Resource and support element maps found in the map packet show exactly where each practice can be applied. Land managers will use this chapter to develop management prescriptions on a project-by-project basis.

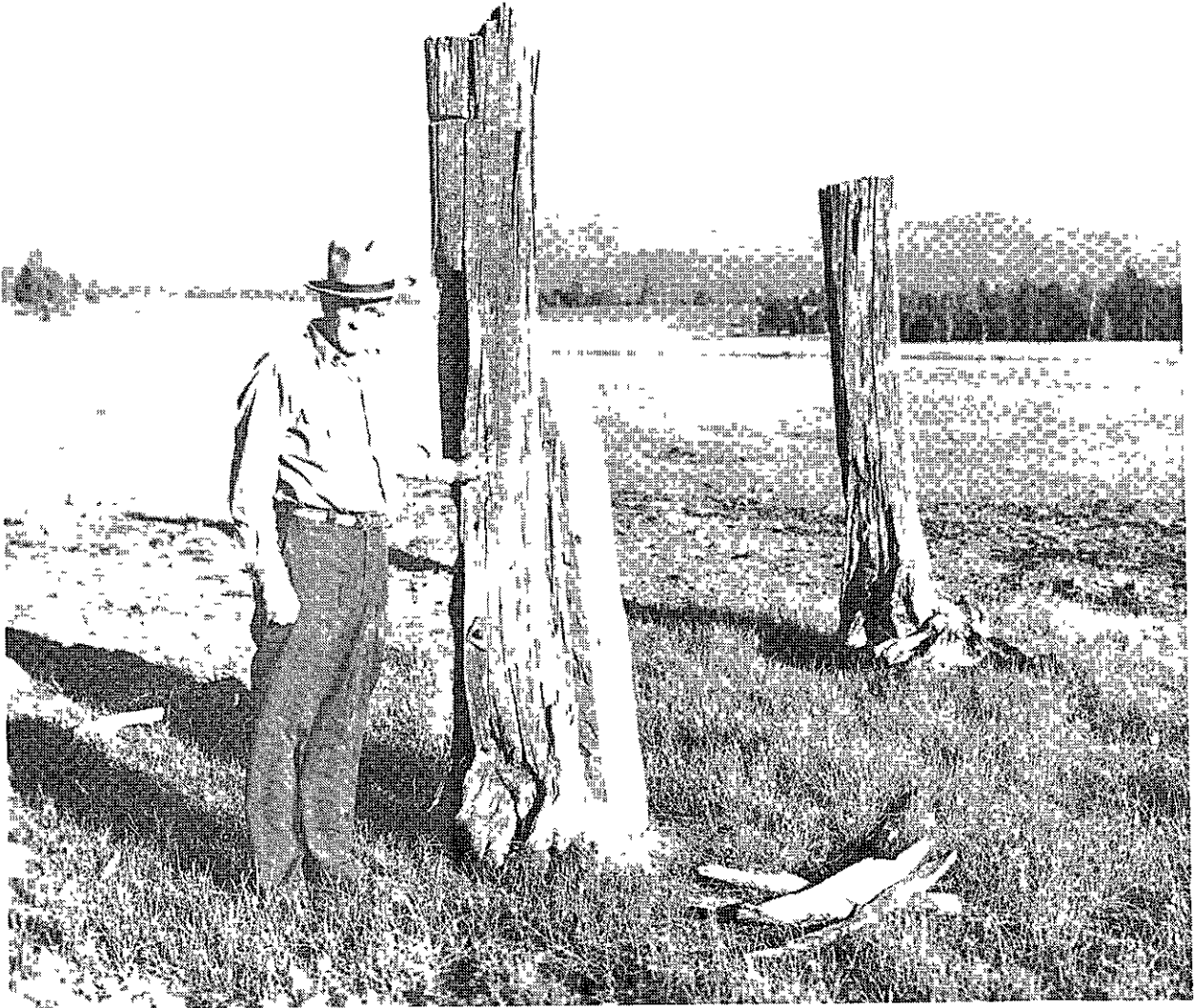
CHAPTER VI, MONITORING AND EVALUATION, describes the process used to determine whether programs and projects are meeting Forest Plan direction. It outlines the monitoring plan for the TNF and explains how to revise or amend the Forest Plan.

CHAPTER VII, STATE AND PRIVATE FORESTRY AND RESEARCH, presents the TNF role in State and private forestry. Resource implementation plans, research, and technical planning needs are described in Appendix B.

CHAPTER VIII, GLOSSARY, contains a list of abbreviations, acronyms, and definitions of Forest Plan terms that require common understanding or that have special meanings.

APPENDICES, contain supplemental information that is explanatory in nature, such as topographic management area maps, timber sale, recreation, and wildlife program schedules, and other activity schedules as appropriate.

MAP PACKET, contains plan and element maps. The Forest Plan Map identifies management areas. The resource and support element maps show where on the Forest certain standards and guidelines are in effect. Element maps are of a very small scale to simplify their concepts to the reader. They were developed from larger scale (7.5 minute) quad maps, which are available at the TNF Forest Supervisor's and Ranger District Offices.



Two Donner Patty' stumps, c 1960

CHAPTER II

INTRODUCTION

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II. INTRODUCTION

THE PURPOSE OF THE PLAN

The purpose of the Tahoe National Forest Land and Resource Management Plan (Forest Plan) is to direct the management of the Tahoe National Forest (TNF) for the next **10 to 15** years. Its goals are to ensure the wise use and protection of TNF resources, fulfill legislative requirements, and address local, Regional, and National issues. The Forest Plan accomplishes these goals in the following ways:

- It guides the management of the Forest for the next **10 to 15** years and displays short- and long-term management intent, goals, and objectives for the TNF
- It allocates land to the combination of management activities for which it is most suited.
- It provides for multiple use and sustained yield of goods and services to maximize long-term net public benefits in a cost-efficient and environmentally sound manner.
- It responds to major issues, management concerns, and resource opportunities.
- It establishes monitoring and evaluation programs to ensure that the Forest Plan direction is carried out and to determine how well outputs and effects were predicted.
- It updates and provides information and direction for the development of program and budget proposals.
- It contributes TNF data that is used in Forest and Rangeland Renewable Resources Planning Act (RPA) Assessments and Programs.
- It meets the requirements of the National Forest Management Act and the Pacific Southwest Regional Guide.

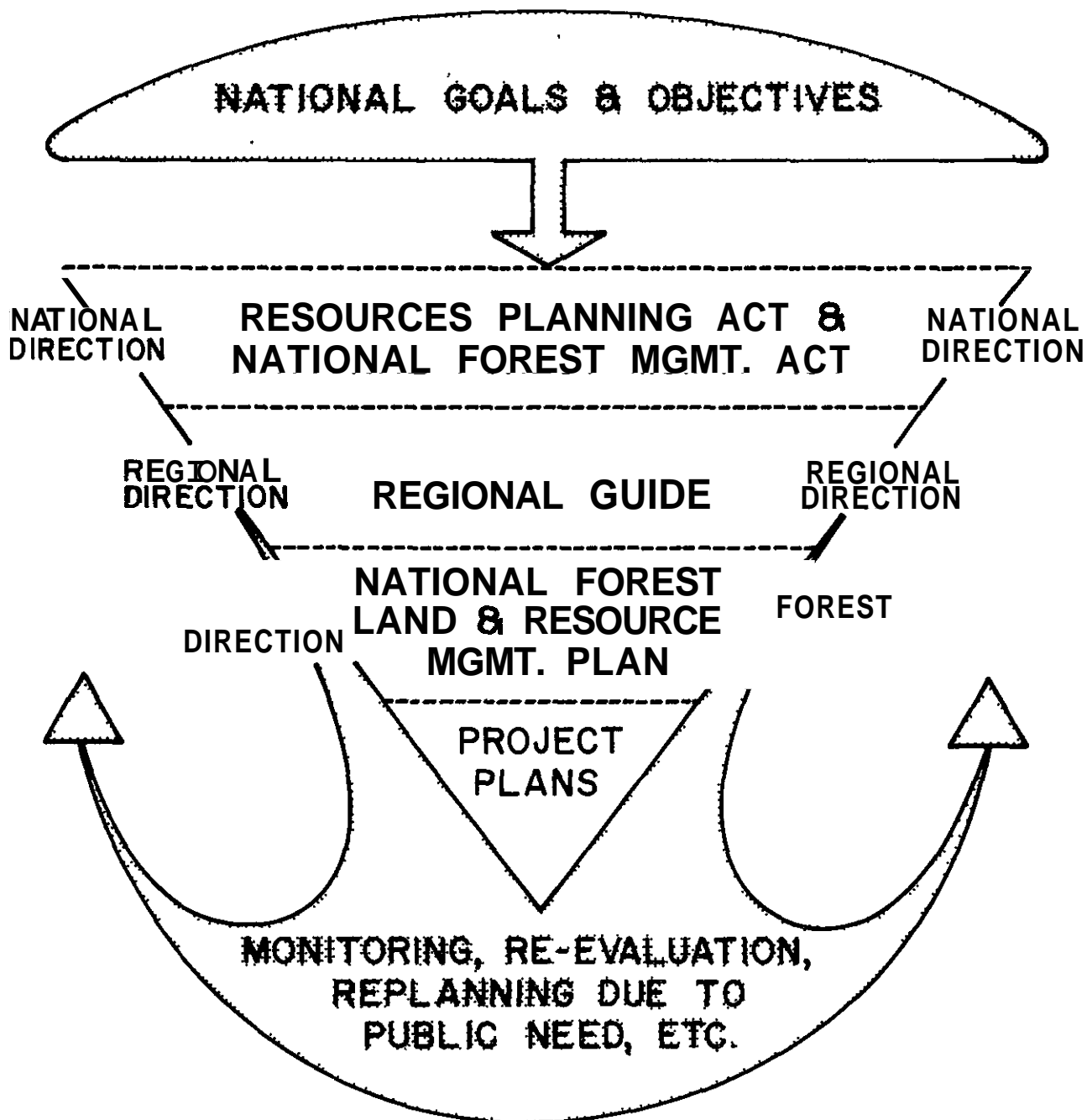
Each Forest is required by law to prepare a Forest Plan like this one. The direction for the Plan comes from RPA, as amended by the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), and the implementing regulations of NFMA (**36** Code of Federal Regulations, Part **219**). Forest Service Manual **1920** establishes authority, objectives, and responsibilities for the planning process. One part of the planning process (described in the EIS) is the formulation of various alternatives -- potential approaches to managing the Tahoe's resources. The Forest Plan is based on the Forest Service's preferred alternative and achieves the **14** principles described in **36 CFR 219.1**.

HOW THIS PLAN RELATES TO OTHER FOREST SERVICE PLANS

Forest Plans are only one part of the Forest Service planning framework. Figure **111** displays the hierarchy of land management planning in the National Forest System. Based on information from the Regions, the National RPA Recommended Program establishes direction and assigns targets to the Regions for producing goods and services. Each Region in turn provides direction and disperses its share of the national production levels to its Forests. This distribution is based on detailed, site-specific information gathered at each National Forest level. Each Forest Plan substantiates whether or not a change is warranted in the production levels assigned by the Region. If a change is called for in the Forest Plan, this information will appear in future revisions of the Regional Land and Resource Management Guide.

The Forest Plan and its Environmental Impact Statement (EIS) are companion documents. The EIS describes the planning process; it contains the analysis used to formulate, compare, and finally select a preferred alternative. The Forest Plan describes the outcome of the planning process; it presents the preferred

HIERARCHY OF LAND MGMT. PLANNING IN THE NATIONAL FOREST SYSTEM



alternative in the form of management direction. The process used to develop both of these documents is explained in the planning records available at the Forest Supervisor's Office, Tahoe National Forest, Highway 49 and Coyote Street, Nevada City, California 95959.

These two documents will serve as umbrella documents for all project and program planning on the TNF. Most individual projects will still require an environmental analysis, and these site-specific reports will be tiered to the EIS. (See 'How This Plan Will Be Implemented' on page II-4.)

Before this phase of land and resource management planning, managers on the Forest were guided by a variety of resource planning documents. Some of these plans are still applicable because they do not conflict in any way with the intent of the Forest Plan. These are listed by name in Appendix A. Also listed are the plans that have been incorporated into this document by reference, those that have been incorporated but need to be amended, and those that have been incorporated and thus superseded by the Plan.

HOW THIS PLAN RELATES TO OTHER AGENCIES' DOCUMENTS

The National Forest Management Act requires that planning efforts be coordinated to the extent feasible with the plans of other public entities, Native American tribes, and Owners of private lands located within the TNF boundary. In response to this directive, the TNF Forest Supervisor contacted Native American tribes, agencies, and private landowners early in the planning process. Because of the large number of private landholdings within the TNF boundary, individual public notices were mailed only to landowners with significant holdings. To contact smaller landowners, the Forest issued press releases, posted public notices, and held general public meetings in 1979 and 1983.

The TNF Interdisciplinary Team reviewed all responses and local land-use plans to identify the management objectives for private and non-Forest Service public lands. Another assessment looked at the interrelated effects of management practices and the degree to which the community depends on these lands. This assessment found that the larger landowners generally manage their lands for timber production in accordance with County Timberland Preservation Zoning. Other landowner objectives included land speculation, summer homes use, mining, commercial development, and creation of natural preserves. These intermingled private lands provide recreation opportunities to the general public, although most owners do not encourage such use.

Although this alternate landownership pattern presents some potential for land-use conflict, it also offers mutual benefits to the various owners. Roads are a good example. Through cooperative road use agreements, the TNF and private landowners are able to share road construction and maintenance costs. In the same way, timber sales and grazing on private lands and other government-owned lands in or adjacent to the TNF helps to meet the needs of local mills and ranchers. In addition, private campgrounds and utility-owned reservoirs located in the TNF help meet recreation demands.

In some areas of mixed ownership, it makes sense to ignore the individual agency or political boundaries and work together to achieve a common resource objective. Coordinated Resource Management Planning (CRMP), as described in Standard and Guideline 54, is an approach that has been used in California since the late 1970's to promote 'improved land management through cooperation.' CRMP is designed to achieve the following while creating the least amount of conflict among users, landowners, and public agencies:

1. Compatibility among natural resources, energy and mineral resources, livestock production, watershed, wildlife habitat, wood products, and recreation.
2. Improvement of the resources and their perpetuation in a high quality condition.

The TNF is developing a CRMP in the Antelope Management Area. This CAMP will use the best efforts of the local people involved, and will integrate private, State, and TNF emphases to manage for wildlife habitat and watershed restoration.

Land management planning coordination between adjacent Forests (the Toiyabe of the Intermountain Region {R-4}, and the Plumas, Eldorado, and Lake Tahoe Basin Management Unit), is an ongoing process. During the Forest Plan development, the Forests coordinated their analysis procedures, management area resource emphases, and specific resource objectives to ensure compatibility.

AREAS NOT AFFECTED BY THE FOREST PLAN

Management of three areas classified by Congress and one area designated by the Chief of the Forest Service will be in accordance with the designations.

- The North Fork American Wild River will be managed in accordance with Public Law **95-625**, as amended. This law documents the Congressional designation of the river and requires the Management and Development Plan-Boundary Description, which was completed in **1979**.
- The Granite Chief Wilderness will be managed in accordance with the **1964** Wilderness Act. The **1984** California Wilderness Act and the Granite Chief Wilderness Implementation Plan will provide specific direction for this area (see Appendix B).
- The Onion Creek Experimental Forest, designated by the Chief of the Forest Service on December **29, 1958**, will continue to be managed for watershed research under an agreement with the Pacific Southwest Forest and Range Experiment Station.
- The Pacific Crest National Scenic Trail (PCNST) crosses the Tahoe National Forest. As required by Public Law **95-625**, the Secretary of Agriculture was to prepare a comprehensive plan for the development, use, and protection of the PCNST. The Secretary assigned planning responsibilities to the Forest Service, which has overall responsibility for administration and coordination for the trail. On April **15, 1982**, Associate Chief Douglas Leisz signed the 'Notice of Decision and Finding of No Significant Impact--Comprehensive Management Plan for the Pacific Crest National Scenic Trail.' This plan states the following direction:

'Viewing and understanding resource management are considered to be part of the normal character of the trail. The management of the various resources will give due consideration to the existence of the trail and trail users within the multiple-use concept. Prescription for management of the visual resources associated with the trail will be part of agency planning process.'

In accordance with this direction, management areas crossed by the PCNST have this specific direction referenced as part of their prescription.

HOW THIS PLAN WILL BE IMPLEMENTED

The Forest Plan will be implemented, or made tangible, at the project level. The District Rangers and their staffs will plan and carry out projects, using the Forest Plan and the EIS to guide their decisions. Because the Plan and the EIS are programmatic in nature, however, a more site-specific analysis will need to be done for each project. Data, evaluations, and other information from the Plan and the EIS will be used as a basis for these environmental analyses. Discussions in the resulting documents (e.g., Environmental Assessments, Decision Memos, Decision Notices-Findings of No Significant Impact, or Records of Decision) will refer back to the Plan EIS (40 CFR **1508.28**). This process of 'tiering to' or making direct reference to broader documents simplifies reporting and allows preparers to concentrate on issues specific to the smaller projects.

Program development, budgeting, and annual work planning will be used to put the Forest Plan to work. These processes will add flexibility to Forest Plan direction, they will allow for annual adjustments and changes needed to reflect current priorities. The end products of these processes will be multi-year and

TABLE 11.1 -SUMMARY OF FORESTWIDEMANAGEMENTOBJECTIVES-AVERAGEANNUAL OUTPUTS

RPA ELEMENT	PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	1982 CURRENT PRODUCTION	1990 1999
A	RECREATION			
	Developed Recreation	MRVD	1,598	2,268
	Downhill Skiing	MRVD	210	292
	Dispersed Recreation	MRVD	2,306	2,925
	Wilderness	MRVD	0	55
Trail Construction/ Reconstruction	MILE	23	7.2	
		0		
B	WILDERNESS	ACRE		18,705
C	WILDLIFE		1,000	
	Wildlife Habitat Improvement Wildlife, Fish User Days	ACRE MMFUD	1,098	1,000 103.0
D	RANGE Livestock Use	AUM	20,000	20,800
E	TIMBER			
	Sawtimber	MMBF	149.0*	142.3 **
	Fuelwood	MCORD	28	28
	Reforestation	ACRE	1,450	3,865
Timber Stand Improvement	ACRE	2,596	12,516	
F	WATER			
	Yield Meeting Quality Goal Watershed Improvement	M Ac.Ft. ACRE	1,961 120	2,080 100
G	MINERALS Plans of Operations	NUMBER	150	220
J	LANDS			
	Land Purchase/Acquisition Landline Location	ACRE MILE	2,300 115	500 120
L	FACILITIES			
	Arterial, Collector, Local Road Construction/Reconstruction Road Maintenance	MILE MILE	99 3,250	53 3,303
P	PROTECTION Fuel Break and Fuels Treatment	ACRE	8,000	9,100

annual work programs that will specify what it will take and what it will cost to achieve the output levels outlined in the Forest Plan. (Table 11.1 summarizes the objectives (expected outputs) for the first decade that the Forest Plan will be in effect. A more complete list of objectives appears in Chapter V, Table V 1.) They will also specify the targets that the TNF Management Team and their staff must meet in order to comply with the Forest Plan. The Program Accounting and Management Attainment Reporting (PAMAR) system will monitor the accomplishments of these annual work programs.

Budget proposals include funding for operation, maintenance, and investment projects necessary for the continued management of the TNF. Naturally, the successful implementation of the Forest Plan is tied directly to these funds. Funding requests for the immediate future (FY 1990-1991) will have already been submitted to Congress by the time this Plan is implemented in FY 1990. Budget levels for this period may or may not, therefore, be adequate to meet targets outlined in the Forest Plan. In the same way, future Congressional appropriations and allocations made by the Chief or the Regional Forester are not guaranteed to always match the Plan. The rate of implementation, therefore, will depend on funding realities for any particular year.

It may also take some time before all activities conducted on the Forest comply with the Forest Plan (CFR 219.10(e)). In the case of existing contracts, the Forest must honor the original terms of the contract if it was signed before the Forest Plan went into effect. The lifespan of a contract may be several months in the case of salvage sales, or as long as 20 years in the case of ski area special-use permits. Other projects that are just being developed may be only mid-way through their development cycle. Timber sales, for instance, take 3 to 7 years to develop because of their size and complexity. A timber sale that was analyzed back in 1988 may not be marked and cruised until 1990, and won't be appraised or sold until 1991. Facility and campground development, fish and wildlife habitat improvement, and grazing activities also have long development periods.

Projects such as these that are in the second to seventh year of planning will be brought into compliance as soon as practicable. Otherwise, most operation and maintenance activities, new projects, projects in the first year of development, new special-use proposals, and transfers of existing permits will comply with the Forest Plan within the first year of implementation.

The Forest Plan will be reviewed every 5 years to determine whether TNF conditions or demands of the public have significantly changed. The Forest Plan will ordinarily be revised on a 10-year cycle, or at least every 15 years; however, it may be revised whenever the Forest Supervisor determines that changing conditions or demands would significantly affect TNF programs. On the TNF, for example, the landownership pattern is constantly changing as the Forest acquires or exchanges land. When the pattern changes, the Forest Plan may need to be updated, revised, or amended as determined by NEPA and NFMA. Procedures for revising or amending the Plan are discussed further in Chapter VI.



Giant slalom race, top of Mount Lincoln, 1940

CHAPTER III

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III. SUMMARY OF THE ANALYSIS OF THE MANAGEMENT SITUATION

This chapter summarizes the document entitled Analysis of the Management Situation (**AMS**), Tahoe National Forest, August 1982, Revised October, 1988. The AMS projects public demand and the Forest's supply of goods and services. The AMS focuses on the TNF's ability to respond to use and development opportunities, public issues, and management concerns that were identified during the planning process. It also discusses the Forest's ability *to* meet the resource targets identified in the Pacific Southwest Regional Guide.

This summary is presented in two parts: Supply and Demand Analysis by Resource and Evaluation of Potential Output Levels of Selected Resources.

SUPPLY AND DEMAND ANALYSIS BY RESOURCE

This section analyzes each resource according *to*: (1) current management direction, (2) supply or production capability, (3) existing and projected demand, and (4) need or opportunity for change. It is organized by RPA element, i.e., (a) recreation, (b) wilderness, etc. The major sections of this chapter are summarized as follows:

1. Current Management Direction describes the existing key goals and objectives, standards, policies, and guidelines for that resource.
2. Supply or Production Capability describes the TNF's capability to produce or supply that good or service. It considers physical and biological characteristics and the analysis of capable, available, and suitable land. Differing 'benchmark levels' of outputs were analyzed *to* establish the bounds for the range of alternative supply levels considered in this planning process.
3. Existing and Projected Demand is described for goods and services from each resource. Due *to* lack of data in most cases, demand projections are not specified by price-quantity relationships. Current demand is measured by the current level of outputs, although in many cases actual demand may be greater than the current production of goods and services. For projecting demand, a key assumption is that demand is increasing in proportion *to* growth of the population of the area impacted by TNF management. Since supply and demand are estimated independently and without consideration of price effects, projected demand may exceed supply in the future.
4. Need or Opportunity for Change highlights potential changes from current management direction.

This section summarizes previous information developed in the planning process. More detailed information may be found in the following documents on file in the Forest Supervisor's Office, Tahoe National Forest:

- o The Tahoe National Forest Planning File: Standards, Instructions, and Coding Definitions was developed to meet the intent of NFMA. The data elements documented in this book were agreed to by the Forest's Interdisciplinary and Management Teams during 1980, and were revised in 1983, 1984, and 1988. The data elements were selected *to* meet NFMA and to address the public issues, management concerns, and resource use and development opportunities (ICO's) identified during the scoping sessions for the Forest's Land and Resource Management Plan.

Not all inventory data is stored in the TNF's computer-designed planning file. Many types of data, such as sociologic and economic overview narratives, cultural reports, wildlife information, resource maps, etc., simply do not lend themselves *to* storage in an electronic data system. Likewise, much of the data stored in this planning file has supportive or backup information not easily adapted *to* storage by an electronic data system.

- o Planning Issues, January **1981**, Tahoe National Forest, approved by the Regional Forester October **6, 1980**. This document lists the major planning issues on the TNF. The Further Planning Issue was revised on 4/1/83 to incorporate all inventoried roadless areas on the TNF, but now has been resolved and not considered to be an issue for this planning period because of enactment of the California Wilderness Act of **1984** (see Appendix **G** of the FEIS)..
- o The Soclo-Economic **Overview**, May **1981**, Dornbusch and Associates, contains social and economic reference data.
- o The Analysis of the Management Situation, August **1982**, revised October, **1988**, Tahoe National Forest, discusses the supply, demand, need for change, and current management situation for Forest resources and contains detailed analyses of supply potentials
- o Planning Criteria, Land and Resource Management Plan, approved by the Regional Forester **5/12/81**, lists the planning criteria developed to complete the planning process
- o The Reference Book of Practices May **1981**, developed the management practices used in Forestwide standards and guidelines and management prescriptions.
- o The Identification of Lands Tentatively Capable, Available, and Suitable for Resource Management, March **1982**, revised July **1985**, developed the criteria to identify the lands available, capable, and suitable for each resource.

These records are referenced throughout the **FEIS** and this Forest Plan.

RECREATION

1. Current Management Direction

The **TNF's** outdoor recreation program is designed to provide various types of outdoor recreation opportunities for residents and visitors to the TNF under the authority of the Resource Planning Act of **1974**, the National Forest Management Act of **1976**, the National Historic Preservation Act of **1966**, and other relevant acts and Executive Orders.

The program includes all practices necessary to protect, administer, and develop outdoor recreational opportunities in a manner compatible with other resource values and with minimal environmental impact. In addition, the recreation program protects, manages, and develops trails and roads to scenic and cultural resources on the Forest.

The Recreation Opportunity Spectrum (ROS) categorizes recreation areas based on their size, distance from roads, and degree of development. It is used to determine existing and potential recreation activities and opportunities on the TNF. The existing inventory provides a base against which future conditions can be compared.

All identified cultural sites are managed as if they were on the National Register of Historic Places until their potential for meeting Register criteria can be evaluated. Cultural sites are inventoried as part of other project activities.

About **97** miles of the Pacific Crest National Scenic Trail (PCNST) cross the Tahoe National Forest. The PCNST Comprehensive Management Plan contains the following direction:

'Viewing and understanding resource management are considered to be part of the normal character of the trail. The management of the various resources will give due consideration to the existence of the trail and trail users within the multiple use concept. Prescription for management of the visual resources associated with the trail will be part of agency planning process'

Management areas that are crossed by the PCNST have this specific direction referenced as part of their prescription

The Western States Trail and the Tevis Cup Loop are used for long distance horse races and running events. There is an interest in nominating these trails for classification under the National Trail System. Both trails meet the criteria for being classified as National Recreation Trails.

The North Fork American Wild River is classified by Congress and administered according to the North Fork American Wild River Management and Development Plan. Visual quality is managed according to initial visual quality objectives, adjusted after a project-level analysis.

Existing downhill ski facilities may be expanded to their maximum capacity. Four new sites may be developed under existing direction.

Candidate Research Natural Areas (RNA's) needed to complete the botanical target system will be identified. Preferred locations are in wilderness or limited-use areas. The aquatic and geologic target system is deferred, and known unique areas will be considered and Special Interest Areas (SIA's) recommended on a case-by-case basis. Identified RNA's may be classified for research and educational purposes.

2. Supply or Production Capability

A. Recreation Opportunity Spectrum (ROS). Recreation use has increased steadily for the past 30 years to its present annual level of about five million recreation visitor days (RVDs) in 1986. This places the TNF among the top 10 National Forests in the nation in quantity of recreation use. Table 111.1 shows by ROS class: (1) public and private sector sites, (2) recreation use capacity, in persons at one time (PAOT), for developed and dispersed recreation sites, and (3) present recreation use, in recreation visitor days, for developed and dispersed recreation sites. All tables use the 1982 recreation use figures when total recreation use on the Forest was around four million RVDs.

TABLE 111.1 - PERSONS-AT-ONE-TIME (PAOT) BY RECREATION OPPORTUNITY SPECTRUM (ROS) CLASS

ROS Class	Public Sites	Private Sites	PAOT Dev.	PAOT Disp.	RVDs Dev.	RVDs Disp.
Rural	90	51	26,819	167,686	1,649,900	622,674
Roaded Natural	36	17	3,265	389,053	235,200	1,337,595
Semi-primitive Motorized	1	0	10	1,226	100	184,496
Semi-primitive Nonmotorized	0	2	10	1,000	600	161,434
Primitive	0	0	0	0	0	0
TOTAL	127	70	30,104	558,965	1,885,800	2,306,200

B. Developed and Dispersed Recreation. The TNF has 197 developed sites on 1,843 acres (Table 111.2). The majority of these sites are family and group campgrounds, picnicking, or private organization sites. Most use occurs at camping and picnicking sites and private winter sport sites. Recreation facilities are generally adjacent to highways, streams, lakes, and reservoirs. Facilities in the Rural ROS category are located adjacent to Interstate 80, Highway 89 near Alpine Meadows and Squaw Valley, adjacent to Highways 20, 49 and 89, and the major reservoirs such as Bullards Bar, French Meadows, Jackson Meadow, and Boca-Prosser-Stampede.

TABLE 1112 - DEVELOPED RECREATION SUMMARY

Type of Facility	Number of Sites	Developed Acres	Capacity PAOT	RVDs 1982
Vistas	5	13	425	9,500
Park-Sports Site	1	4	120	2,500
Boating Sites	9	30	2,040	30,500
Swimming Sites	4	10	825	9,200
Family Camping	67	720	8,195	826,400
Group Camping	9	66	835	68,800
Family Picnicking	19	112	1,175	98,900
Lodge-Resort-Private	4	21	250	43,900
Organization-Private	17	131	2,180	174,200
Other Concessionaires	2	9	80	4,700
Recreation Res-Private	42	151	1,115	90,600
Ski Areas*	4	545	12,200	497,600
Interpretive Services	14	31	664	29,000
TOTAL	197	1,843	30,104	1,885,800

*Includes both NFS and private lands.

An inventory of potential recreation sites within each ROS class shows that supply is adequate to meet recreation demand for the next several decades

Developed recreation site use averages about 24 percent of theoretical capacity, which suggests that ample opportunity exists to increase use of developed recreation sites. Experience through out the Pacific Southwest Region indicates that optimum campground use is about 35 to 40 percent of theoretical capacity. Averages, however, do not show that often the sites are filled to capacity, while at other times there is no use. Enough potential developed recreation sites occur within each ROS class to adequately meet the recreation demand for the next several decades.

All developed winter sports facilities (ski resorts) are in the Rural ROS category and are located near the Sierra Nevada crest. Skiing is a popular sport on the TNF. The ski areas on the TNF have provided over 20 percent of Northern California's ski use in recent years. The share goes to over 50 percent if adjacent private resorts are included.

The four downhill ski resorts operated under special-use permit (operating partially or entirely on National Forest System (NFS) lands) are approaching full use. They provide nearly 497,600 recreation visitor days per year in the TNF 209,500 RVDs per year on NFS land and 288,100 RVDs on private land. No new ski areas have been developed in recent years. Overcrowding on peak use weekends and holidays lessens the recreation experience. Five downhill ski resorts are entirely on private land within the TNF boundary and several others are on private land adjacent to, but outside, the TNF boundary. Capacity (skiers at-one-time, SAOT's) could be increased by expanding existing sites and/or developing new areas.

Master plans for the four existing downhill ski resorts could increase capacity by 40,500 SAOT's by the fifth decade. A potential for interconnecting ski areas along the Sierra Nevada crest exists, which would provide better dispersal and opportunities for skiers.

Three potential winter sports sites with a potential for 31,500 SAOTS have been identified on the TNF. These include Mt. Lola-Independence Lake, Tinker Knob, and Red Mountain-Signal

Peak. Another proposed development, Cold Stream, located mostly on private land south of Donner Lake, would include some NFS lands. Factors limiting future winter sports development include the inability of the transportation system to absorb the added traffic, and the impact of such development on adjacent communities. Blyth Arena, the primary ice arena for the 1960 Winter Olympics, was operated under a special-use permit to Placer County which, in turn, had issued a permit to another operator. As authorized by Public Law 97-179 (5/24/82), the Arena and five acres of surrounding land were sold to private interests in October 1982. The facility was destroyed by the heavy snows during the winter of 1982-83 and subsequently removed.

Off-highway vehicle use, including snowmobile use, is administered through the direction contained in the TNF Off-highway Vehicle Travel Plan and the Transportation Management Program.

This plan divides the total TNF land base into two classifications, (1) Usable acres and (2) Unusable acres. Seven OHV prescription categories are applied to the Usable acres

Usable Acres

- (0) Closed
- (1) **Open**
- (2) Designated routes only summer/open over snow
- (3) Designated routes only
- (4) Designated routes only summer/closed over snow
- (5) Closed summer/open winter
- (6) Designated routes only/closed 11/16 to 4/30

Vehicles are not permitted on about 21,060 acres. These include the North Fork American Wild River, Placer County Big Tree Grove, Foresthill Seed Orchard, Onion Creek Experimental Forest, and Grouse Lakes and Granite Chief motor vehicle closure areas, which includes the Granite Chief Wilderness. Motor vehicles are restricted to designated routes on another 266,325 acres. On the remaining 484,999 acres, motor vehicle use is unrestricted except for seasonal closure of some roads and trails. Recreation off-highway vehicle use was about 177,500 RVD's in 1982.

Rapidly increasing snowmobile use is also managed under the Off-highway Vehicle Travel Plan and the Transportation Management Program. In addition to the closures listed above, snowmobiles are not permitted in the Deep Creek cross-country ski area. This action was taken to reduce conflicts between cross-country skiers and snowmobilers because both frequently use the same areas. Unrestricted snowmobile use is allowed in much of the area where summer vehicle use is restricted to designated routes, however, the Castle Peak area limits snowmobile use to designated routes. Snowmobiles are also excluded in critical winter deer ranges for specific winter periods. The Off-highway Vehicle Travel Plan will be updated and the Transportation Management Program will be incorporated, in response to the Forest Plan.

Cross-country (Nordic) skiing is the fastest growing dispersed recreation activity on the Forest. This skiing use accounted for about 36,100 RVD's in 1982, but was practically nonexistent in 1970. An area near Deep and Pole Creeks has been established for Cross-country skiing (no snowmobile use permitted). Other popular locations include Castle Valley-Round Valley, Yuba Pass, Steep Hollow Creek, and several areas [Nordic Skiing, A Trail System for the Truckee Ranger District, TNF. Unpublished manuscript by David Hammond, Truckee District Ranger, TNF, 1981 (now in the Washington Office)] along Highway 89 between Truckee and Sierraville ('Dispersed Winter Sports Facility Plan, Tahoe National Forest' Unpublished ms. by Edwin H. Gregg, Jr., Recreation Staff Officer, TNF, 1979).

Cross-country skiing affects the environment least of any recreation. The primary conflict is with snowmobiles on the same trail system. Avalanches, broken equipment, and blizzards

Club	Termination Date
Alpineer Club	None listed
City of Woodland	12/31/93
Rocklin BSA	12/31/93
Sacramento Stake LDS	12/31/93
Sacramento BSA	04/27/99
Lia Hona Club	12/31/03
YMCA of the Northbay	12/31/93
Oakland Ski Club	None listed
Polish Ski Club	12/31/98
Sierra Nevada Girl Scouts	3/29/2008
Fredric Burk Foundation for Education	5/04/2004
Sterling Lake BSA	12/31/93
Woodchuck 4-H	12/31/93
Yuba-Sutter Campfire Girls	12/31/93

Permits for seven of these facilities terminate during the next planning period and are not open to review during this planning period. The remaining seven facilities' permits terminate during this planning period. Currently, no higher use or conflict with other resources has been identified for these sites. Prior to the permit termination dates, the remaining uses will be reviewed for needed changes in the existing permit.

- C. Cultural Resources The TNF is charged with managing cultural resources as a nonrenewable resource to maintain their scientific, historical, and social integrity. A number of laws, Executive Orders, and regulations provide direction for the TNF cultural resource management program. These have been codified in FSM 2361 as objectives, policies, and responsibilities. Briefly, the TNF is charged with conducting an inventory of resources located within the Forest, evaluating resources for their eligibility for the National Register of Historic Places, and managing those resources with historical, scientific, or social significance.

The TNF fosters and maintains relationships with the California Office of Historic Preservation, the President's Advisory Council on Historic Preservation, local universities and colleges, Native American tribes and organizations, historical societies, and parties interested in cultural resources of the TNF. The relationship with the California Office of Historic Preservation and the President's Advisory Council is formal and involves regular consultation as specified by 36 CFR 800. Cultural resource activities are also coordinated with the California State History Plan and the Statewide Archaeological Site Survey.

Consultation with Native American tribes and organizations occurs when Forest management decisions may affect cultural resources of interest or concern to Native Americans. These may be religious areas, archaeological sites or artifacts, or areas traditionally used by California Native Americans. The TNF is directed by the American Indian Religious Freedom Act to ensure that its policies and procedures do not infringe upon Indian religious freedom.

The inventory of cultural resources located within the TNF began in 1972. To date, about 25 percent of the Forest (218,000 acres) has been examined. This inventory work has succeeded in locating over 1,500 cultural resource sites. Of these, over 900 represent historic sites characteristic of early-day mining, logging, homesteading, and ranching activities. Prehistoric sites total over 650 and represent use and occupancy of the Forest by California Native Americans and their ancestors. The following cultural resource sites are presently listed on the National Register:

- Hawley Lake Petroglyph Site
- Kyburz Flat Archaeological Site
- Meadow Lake Petroglyph Site
- Sardine Valley Archaeological Site
- Stampede Archaeological Site
- Oregon Creek Covered Bridge Historical Site

In addition, over 330 sites have been found to meet the National Register of Historic Places eligibility criteria. These criteria are the principal ones used to evaluate the significance of cultural resource sites on the TNF.

A synthesis of Forest history and prehistory has been prepared detailing the nearly 10,000 years of human occupation of the TNF. This synthesis is based on data gathered from published historical sources, unpublished manuscripts, diaries, records, oral histories, and the results of archaeological surveys and excavations.

The gathering and analysis of this data was guided by a number of principles reflecting a belief that human culture and human history represent complex and dynamic systems. The history of man's use of the TNF is viewed as a dynamic, evolving phenomenon. The economic, political, social, technological, and ideological aspects of cultural systems are of principal interest. Through the study of the dynamics and evolution of these systems, we learn about past societies and how modern cultures change, evolve, and survive. Concomitant with this view is the belief that the tangible material remains of past cultures and societies preserved within the TNF are invaluable and provide an important body of information of relevance to the study of culture.

Knowledge of the time period preceding the coming of the first white settlers stems primarily from archaeological studies of ancient villages, seasonal camps, and other locations inhabited prehistorically. These studies indicate that native people began to live in the TNF soon after the last glacial age, nearly 10,000 years ago. These people were skilled and specialized hunters who found the area rich in game and other resources. Over a period of time, the economics of these prehistoric peoples diversified, and by 2000 BC. the TNF was home for a large human population whose culture was specialized, complex, and elaborate.

When the first settlers arrived in the 1840's the TNF area was occupied by two tribes, the Washoe and Nisenan (Maidu). The Gold Rush of 1849 brought about dramatic changes in the native cultures, as it did elsewhere in California

Gold mining was the principal industry in the TNF through the 1880's. Many of the area's modern communities began as early gold camps. With the completion of the transcontinental railroad in 1869, an extensive lumber industry developed. Much of the TNF's forested land was cut over between 1880 and the mid-1930's. The Truckee region, which experiences exceptionally cold winters, was the location of one of California's largest natural ice production industries in the late 19th and early 20th centuries.

The inventory of locations containing evidence of historic and prehistoric use of the TNF is a primary objective of the cultural resources program. Inventory work is accomplished in conjunction with other Forest projects such as timber sales and recreational developments. Resources identified during inventory are evaluated for their eligibility for the National Register of Historic Places. Those which meet the eligibility criteria are protected from disturbance by activities and developments, and are managed to maintain their historic, scientific, or social values,

Cultural resources are especially vulnerable to disturbance; once disturbed or damaged, the information lost is irreplaceable. Vandalism of cultural resources is a major concern. The large amount of private land within the TNF boundary and the ease of access to most areas of the Forest have contributed to an ever-increasing vandalism problem. Bottle and relic collectors have systematically disturbed historical sites. Disturbance stems from use of metal detectors and shovels to obtain artifacts; in some cases heavy equipment is used. No specific activities are employed to remedy this situation. A comprehensive program of public education, site enhancement, "antiquities" signing, and frequent patrolling will be necessary to reduce vandalism.

A major objective of the cultural resources program is identification and protection of cultural resources threatened by Forest projects. This is a base-level management strategy. Higher levels of management that may be initiated in the future include interpretive displays from specific cultural resources for public education and enjoyment, and intensified efforts to obtain scientific information through archaeological studies. The initiation of cultural resource inventories separate from Forest project impetus would increase the rate at which cultural resources are identified and protected. Separate cultural inventories would also help correct a bias in the cultural resource data base from forested lands having received a disproportionate share of inventory work.

- D. Wild and Scenic Rivers A portion (38.3 miles) of the North Fork of the American River is currently classified by Congress as a Wild River. The North Fork American River Management and Development Plan, October 1979, directs the management and development of the river. This direction will be integrated into the Forest Plan. Development will be limited to designated trails, bridges, and sanitation facilities necessary for public health and safety. Trailheads and other support facilities will be located outside the Wild River classified area. This area includes 5,788 acres of NFS lands in the semi-primitive nonmotorized ROS class and has an annual recreation use of approximately 15,000 RVDs.

In 1972, California included the North Fork of the American River in its Wild and Scenic Rivers System. This designation is broader than the current Federal classification. It more or less extends to the top of the canyon, rather than one-quarter mile on either side of the river. The management objective for the State is generally compatible with the National Forest management objective, which is to maintain the river's natural, free-flowing condition. The plan has not been approved by California as of October 1988.

Portions of the South Yuba River and the Middle Yuba River were included in the Heritage Conservation and Recreation Service (now a part of the National Park Service) Nationwide Rivers Inventory completed in 1981. Subsequent TNF analysis of these rivers determined that

both rivers met eligibility criteria for inclusion in the National Wild and Scenic River System. A summary of this analysis is included in Appendix E of the FEIS.

Based on public response to the Draft EIS and Plan the Middle Fork American River, North Fork of the Middle Fork American River, Laveuola Creek, and Canyon Creek on Downieville District were identified and evaluated for outstandingly remarkable values to determine if they were eligible for Wild and Scenic River status. No outstandingly remarkable values were identified for these four rivers, therefore they are not eligible for inclusion in the Wild and Scenic River System and are not included in any of the alternatives considered in detail. Refer to Appendix E of the FEIS for more detail. In addition, the Truckee River will be studied for eligibility and suitability, and the upper Rubicon for eligibility, in cooperation with the Lake Tahoe Basin Management Unit and Eldorado National Forest, respectively.

- E. Visual Resources. The TNF exhibits diverse and distinctive landscape qualities highly suited to scenic appreciation. The State of California designated portions of Highway 20 and Highway 49 as State Scenic Highways. Portions of Highways 49 and 89 and Interstate 80 are designated by local counties as scenic highways and may be submitted to the State for State designation in the future. Standards for the management of visual resources by the TNF are described as visual quality objectives (National Landscape Mgt. Vol. 2, Chapter 1, Agric. Handbook 462, 1974). These visual quality objectives (VQOs) specify how much management activities may contrast visually with the surrounding natural landscape. The 'initial VQO' mapping (which is not current management direction but does serve as a management guideline) provides a baseline for comparison of 'adopted VQOs'. The initial VQO recommendations for the TNF are that 44 percent of the Forest, or 348,000 acres, be managed for retention (R) (provide management activities which are not visually evident); 43 percent, or 342,000 acres, be managed for partial retention (PR) (management activities remain visually subordinate to the characteristic landscape); 11 percent, or 89,000 acres, be managed for modification (M) (management activities visually dominate the original landscape), and 2 percent, or 14,000 acres, be managed for maximum modification (MM) (management activities dominate the landscape and may appear unnatural when viewed from a foreground or a middleground).

The majority of the TNF has either distinctive landscape or common landscape as measured by 'variety class.' A majority of the TNF is also in a 'high sensitivity level' that measures peoples' concern for scenic quality. Management activities in the past have not had dominant visual effects. Therefore, changes in the TNF landscape have usually not been visually evident to the average person unless pointed out. However, under current management direction, including the 1978 Timber Management Plan for the TNF, there will be more areas in the future where changes in the landscape will be noticed by the average forest visitor.

- F. Research Natural Areas and **Special** Interest Areas. No existing Research Natural Areas or Special Interest Areas occur on the TNF. The Washoe pine area near Babbitt Peak, Sugar Pine Point near the North Fork of the American River, and Lyon Peak/Needle Lake area north of the Granite Chief Wilderness have been proposed, but have not yet been established. A detailed ground survey of the Sugar Pine Point and Lyon Peak/Needle Lake areas is needed to determine their boundaries. The Basin Peak mountain hemlock area is on NFS land, but it is very small in size. The Mt. Lola mountain hemlock area near Independence Lake has been proposed for RNA, but is partially on private land and also has been proposed for downhill ski area development. The Placer County Big Tree Grove has been proposed as a Special Interest (Botanical) Area, but also has not yet been established. Several other areas have been inventoried as having potential for designation as Geologic, Scenic, and Cultural SIAs.
- G. The Onion Creek Experimental Forest, designated by the Chief of the Forest Service on December 29, 1958, will continue to be managed for watershed research under an agreement with the Pacific Southwest Forest and Range Experiment Station.

3 Existing and Projected Demand

Because of the proximity of the TNF to several metropolitan areas in Northern California and Nevada and the high use areas around Lake Tahoe, demand for a variety of yearlong recreation opportunities is high. The demand for different types of recreation opportunities may conflict with each other (such as off-highway vehicle use with nonmotorized dispersed use and cross-country skiing with snowmobile use).

Under current management, it is projected that recreation on the Forest will, as a minimum, increase at the same rate as the projected population in the impact counties and extended zone as identified in the Socio-Economic Overview. This would produce a total Forest recreation use in 1990 of 5,193,000 RVDs and 9,108,000 RVD's in 2030

4 Need or Opportunity For Change

VQOs need to be specified for all areas because the Forest does not now have adopted VQO's for the entire TNF. Specific management direction is needed for cross-country skiing to resolve certain conflicts with other users. Recreation use needs to be balanced to avoid overcrowded conditions in certain developed sites during weekends, holidays, and other heavy use periods.

Developed recreation management direction needs to specify the management areas where recreation facilities should be developed, the capacity of the facilities, and development priority. Existing developed recreation uses should be reviewed and changes in future management direction identified where needed, especially where conflicts have occurred on existing recreational sites adjacent to private land. Facilities currently operated under special-use permit should be reviewed prior to the permit's termination date.

Management direction needs to specify suitable dispersed recreation activities by ROS class and to indicate the management areas where specific dispersed recreation activities are restricted.

Visual resource direction should specify the VQOs to be met in each management area.

The Placer County Big Tree Grove is a proposed Botanical Special Interest Area, and the Babbin Peak Washoe Pine and Sugar Pine Point areas are proposed Research Natural Areas. The environmental analyses and establishment reports are being worked on, but are not yet completed. Additional detailed ground surveys must be completed to determine the exact boundaries and configuration of the mountain hemlock areas near Basin Peak and Lyon Peak/Needle Lake.

WILDERNESS

1. Current Management Direction

A roadless area review and evaluation (RARE) was conducted in 1972-73 to inventory roadless areas to be evaluated for wilderness potential. Areas inventoried on the TNF were: Granite Chief, North Fork American River, Grouse Lakes, Castle Peak, Middle Yuba, and Lakes (the majority of which is on the Plumas NF).

The California Wilderness Act of 1984 designated 18,705 acres of the Granite Chief RARE II Area as wilderness and released the remaining roadless areas for nonwilderness uses. This allows for a wide range of multiple use management options from semi-primitive nonmotorized ROS class to harvesting timber. The appropriate uses are determined in the Forest Plan.

The Granite Chief Wilderness has a varied, highly scenic landscape of forest, meadows, and glacially exposed granite rock. The Wilderness is adjacent to the western watershed boundary of Lake Tahoe and includes Five Lakes Creek and the headwaters of the North Fork and Middle Fork of the American River. The major attractions of this area are its high, rugged granite cliffs and broad glaciated valleys. Portions of a State game refuge extend into the area, and the abundance of

game and nongame animals attracts large numbers of visitors. A Granite Chief Wilderness management plan will be prepared within two years after approval of the TNF Final EIS.

Prescribed burning (planned or unplanned ignitions) has not been used as a management tool in the Granite Chief Wilderness area to date. Current Forest Service policy allows for the use of prescribed fire in wilderness areas to benefit wilderness values and protect adjacent areas from fires originating in the wilderness. Prescribed fire will continue to be available for use in the Granite Chief Wilderness area.

2. Supply or Production Capability

The next-closest wilderness area to Granite Chief is the Desolation Wilderness on the Eldorado National Forest and the Tahoe Basin Management Unit, just south of the TNF boundary. To the north, the nearest is the Bucks Lake Wilderness on the Plumas National Forest.

3. Existing and Projected Demand

The value of wilderness demand is not easily quantified. Assigned values for recreation visitor days are provided by the 1985 RPA program. Dispersed recreation use information for the inventoried roadless areas reflects yearly recreation visitor days. The recreation use in these areas does not necessarily indicate demand for wilderness since some of this use could be considered simply recreation demand, regardless of wilderness or nonwilderness classification. On the other hand as fewer areas are managed for primitive and semi-primitive recreation opportunities, it is expected that demand will increase and exceed the capacity available.

Prescribed fire is limited to planned ignitions within an approved burning plan. Unplanned ignition prescribed burning may be a viable tool in the future, but will require authorization in the Wilderness Management Plan before it can be used.

FISH, WILDLIFE, AND SENSITIVE PLANTS

1. Current Management direction

The National Forest Management Act (NFMA, Pub Law 94-588, 1976) direct that National Forest lands will 'provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple use objectives'. The rules promulgated to implement the NFMA further direct that National Forests will 'maintain viable populations of existing native and desired non-native vertebrate species on the planning area' (36 CFR 219.19). Section 219.19 defines a viable population as 'one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence'. The Section also directs that Forest Plans and alternatives will identify 'Management Indicator Species' (MIS) and fish and wildlife resource planning will include the following elements:

- A. MIS will be used to evaluate the effects of management on fish and wildlife resources and species selected shall include where appropriate:
 - 1) Endangered and threatened plant and animal species identified on State and Federal lists.
 - 2) Species with special habitat needs that may be influenced significantly by planned management programs.
 - 3) Species that are commonly hunted, fished, or trapped.
 - 4) Non-game species of special interest.
- B. Biologists from State fish and wildlife agencies as well as other Federal agencies shall be consulted to coordinate planning for fish and wildlife.
- C. Population trends of the MIS will be monitored and relationships to habitat changes determined. The monitoring will be done in cooperation with State fish and wildlife agencies to the extent practical.

D. Critical habitats for threatened and endangered species shall be identified and protected.

The sensitive plant list for the Pacific Southwest Region was originally developed by combining the Smithsonian and the California Native Plant Society lists. The Tahoe National Forest was then provided with a list of plants known or suspected to occur in the TNF or its vicinity. Changes in the PSW Regional list are made as new information becomes available, resulting in occasional changes to the TNF list.

Currently, the TNF has one Federally endangered and twelve listed sensitive plant species known or suspected to occur in the TNF or its vicinity; no plant is listed as threatened. All necessary steps will be taken to ensure that agency actions do not jeopardize the continued existence of these species, and that viable populations of sensitive plants will be maintained. Therefore, the TNF has developed a sensitive plant program that provides an operational framework with an objective of maintaining a viable population of sensitive plant species by assuring that they receive full consideration in all Forest planning and project efforts. Table 114 lists these plant species.

Status	Plant Name
Endangered	Mahonia sonnei (Truckee Barberry)
Sensitive	<i>Arabis constancei</i> (Constance's rock-cress) <i>Carex paucifructus</i> (Few fruited sedge) <i>Eriogonum umbellatum</i> var. <i>torreyanum</i> (Torrey's Buckwheat) <i>Ivesia aperta</i> (Sierra Valley Ivesia) <i>Ivesia sericoleuca</i> (Plumas Ivesia) <i>Ivesia webberi</i> (Webber's Ivesia) <i>Lewisia cantelowii</i> (Wet cliff Lewisia) <i>Lewisia pygmaea</i> ssp. <i>longipetala</i> (Large flowered pygmy Lewisia) <i>Lewisia serrata</i> (Sawtoothed Lewisia) <i>Phacelia stebbinsii</i> (Stebbins' Phacelia) <i>Silene invisus</i> (Hidden petal champion) <i>Vaccinium coccinium</i> (Scarlet huckleberry)

2 Supply and Status

Fish and Wildlife

Fish and wildlife resources on the TNF are diverse and reflect the diversity of habitats available. The Forest is thought to be inhabited by 387 vertebrate species including 258 bird species, 82 mammal species, 17 reptile species, 9 amphibian species, and 21 species of fish.

As directed by 36 CFR 219.19, the Forest has identified management indicator species (MIS) to evaluate the effects of management alternatives. The Forest has also chosen to use the MIS and additional 'emphasis species' as the focus of the fish and wildlife habitat management program. The emphasis species include individual species as well as groups of species associated with important habitats.

For the TNF, the emphasis species listed in Table 115 were included in groups representing important habitats because: 1) they depend on the habitat for an important life requisite, or 2) are not typically found in many other places. Groups were chosen over individual species because of concern for the Forest's ability to choose an appropriate indicator for all habitats of important habitats (Verner 1984, Patton 1987).

TABLE 115 - EMPHASIS SPECIES GROUPS FOR IMPORTANT WILDLIFE HABITATS

Riparian Habitat

<p>Mt. Yellow-legged Frog Western Terrestrial Garter Snake Black-headed Grosbeak Downy Woodpecker Western Flycatcher Winter Wren House Wren Song Sparrow Yellow Warbler Yellow-bellied Sapsucker Wood duck</p>	<p>Wilson's Warbler Northern Oriole Lincoln's Sparrow Vagrant Shrew Dusky Shrew Ornate Shrew Water Shrew Racwon Mt. Beaver Western Jumping Mouse</p>
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Hardwoods

<p>Dusky-footed Woodrat Rubber Boa Western Skink Mountain Quail Band-tailed Pigeon</p>	<p>Violet Green Swallow Whitebreasted Nuthatch Black Throated Gray Warbler Gray Squirrel Mule/Black-tailed Deer Common Flicker</p>
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Mature/Overmature Forest

Mixed-Conifer	Red Fir
<p>Ensatina Rubber Boa Pileated Woodpecker White-headed Woodpecker Hammonds Flycatcher Red-breasted Nuthatch Brown Creeper Winter Wren Golden-Crowned Kinglet Northern Flying Squirrel</p>	<p>White-headed Woodpecker Black Breasted 3-toed Woodpecker Hammonds Flycatcher Red-breasted Nuthatch Brown Creeper Winter Wren Golden-Crowned Kinglet Red Crossbill Northern Flying Squirrel</p>

<p>Mt Yellow-legged Frog Pacific Tree Frog California Mountain King Snake Western Terrestrial Garter Snake Western Aquatic Garter Snake Calliope Hummingbird Mountain Beaver</p>	<p>Mountain Bluebird Cassin's Finch Mt Whew-crowned Sparrow Wilson's Warbler Lincoln's Sparrow Red-breasted Nuthatch</p>
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Mature and Overmature Eastside Pine

<p>Gopher Snake Swainson's Hawk Townsend's Warbler</p>	<p>Gray Squirrel Badger</p>
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Wetlands

<p>Canada Goose Mallard</p>	1	<p>Cinnamon Teal</p>
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A listing of MIS and emphasis species and a summary of the status for each is shown below in Table 1116 The status of the species groups is also presented.

TABLE 1116 - MIS AND EMPHASIS SPECIES AND SUMMARY

SPECIES	SPECIE: STATUS	POPULATION STATUS	POPULA- TION TREND	INTEREST/ DEMAND	CAPABILITY TO MEET DEMAND
Bald Eagle	FE	20-25	unknown	high	good
Peregrine Falcon	FE	unknown	unknown	high	fair
Lahontan CT Trout	FT	unknown	unknown	high	good
Spotted Owl	FSS	110 pair	unknown	high	good
Great Gray Owl	FSS	unknown	unknown	mod	poor
Goshawk	FSS	unknown	unknown	modhigh	good
Willow Flycatcher	FSS	unknown	unknown	modhigh	fair
Pine Marten	FSS	unknown	unknown	mod.	fair
Paclfic Fisher	FSS	unknown	declining	mod	unknown
Si. Nev. Red Fox	FSS	unknown	unknown	modllow	unknown
Wolverine	ST	unknown	unknown	modllow	unknown
Rainbow Trout	HA	120,000 lbs.	stable	high	good
Brook Trout	HA	72,000 lbs.	unknown	mod.	good
Brown Trout	HA	64,000 lbs	stable	modhigh	good
Kokanee Salmon	HA	unknown	stable	mod.	good
Smallmouth Bass	HA	unknown	stable	mod.	good
Largemouth Bass	HA	unknown	stable	low	unknown
Deer	HA	10-15,000	declining	high	good
Black Bear	HA	200-250	stable	mod.	good
Gray Squirrel	HA	unknown	unknown	mod.	good
Mountain Quail	HA	unknown	unknown	mod.	good
Blue Grouse	HA	unknown	unknown	low	good
Wild Turkey	HA	unknown	unknown	modllow	unknown
Band-tailed Pigeon	HA	unknown	unknown	low	good
Bobcat	HA	unknown	unknown	low	good
Mountain Lion	HA	80-90	increasing	mod.	good
Chickaree	HA	unknown	unknown	very low	good
Osprey	SSC	unknown	unknown	mod	unknown
Sharp-shinned Hawk	SSC	unknown	unknown	low	good
Pileated Woodpecker	SI	unknown	declining	mod	fair
Golden Eagle	SI	unknown	unknown	mod	good
Prairie Falcon	SI	unknown	unknown	low	unknown
Great Blue Heron	SI	1 rookery	stable	low	good
Riparian Group	SI	unknown	stable/decl	high	fair
Hardwood Group	SI	unknown	stable/decl	mod.	fair
Old-growth Groups	SI	unknown	declining	high	poor
Meadow Group	SI	unknown	stable/decl	mod.	fair
Wetlands Group	SI	unknown	increasing	mod.	good

FE Federally I dangered
 FT Federally 1 eatened
 ST State Threatened

Harvest
 State Species of Special Concern
 Special Interest

3. Projected Demand

Table 1117 displays the demand for fishing and hunting. It indicates the demand for consumptive use is increasing.

Based on the increases during the past decade, the demand for fishing is expected to increase approximately 22 percent and the demand for hunting is expected to increase approximately 28 percent during the next decade. The deer herd plans for the Forest indicate an average increase of approximately 25 percent in deer numbers to meet projected demand. Demand for nonconsumptive and consumptive use of other wildlife species is poorly understood.

TABLE 1117 • RECREATIONAL DEMAND FOR FISH, WILDLIFE, AND RELATED INTERESTS (From Socioeconomic Overview, Tahoe National Forest)

DEMAND TYPE	1970 (RVD)	1979 (RVD)	% CHANGE
Fishing	285,400	348,700	+22
Hunting	90,100	115,000	+28

Information on nonconsumptive use of fish and wildlife is lacking. But there are indications that demand is increasing. Based on national averages contained in the 1970 Hunting and Fishing Survey (USF&WS), the Southeastern Economic Survey of Wildlife Recreation, and the 1975 RPA Assessment, the demand for nonconsumptive use was calculated to be 109 percent of the consumptive use.

4. Needs and **Opportunity for** Change

The following major fish and wildlife management concerns and opportunities relate to the basic issue of maintaining viable populations of fish, wildlife and sensitive plants.

- A. Protection of endangered and threatened species on State and Federal lists.
- B. Protection of Forest Service sensitive species.
- C. Establishing and meeting habitat goals and objectives for hunted, fished, and trapped species.
- D. Establishing and meeting habitat goals and objectives for species with special importance to the public that do not have endangered, threatened, or harvest status.
- E. Protection of species associated with key habitats such as riparian, old-growth, meadows, and hardwoods.
- F. Development of a comprehensive monitoring program to evaluate and adjust the direction of the fish and wildlife habitat management program.

DIVERSITY

1. Current Management Direction

The NFMA (Sec. 6 (g) (2) (A)) directs Forests to 'provide for diversity of plant and animal communities based on the capability and suitability of the specific land area in order to meet overall multiple use objectives...'. The NFMA regulations (36 CFR 219.3) define diversity as 'the distribution of different plant and animal communities and species within the area covered by a land and resource

management plan'. Section 219.27 directs that overall forest diversity should approximate that which would be expected in a natural forest and tree species diversity should be similar to the existing Forestwide condition. However, this section also provides that reductions in diversity can occur when needed to meet overall multiple use objectives

On the Tahoe National Forest, the diversity issue is most strongly associated with 1) maintenance of diverse forest seral stages over time, and 2) protection of important habitat elements such as snags, down logs, hardwoods, riparian habitats, meadows and meadow edges, and wetlands. For much of the public, the need to maintain diverse seral stages appears to be focused on **the** preservation of large tracts of undisturbed land. The principal focus for these 'biological reserves' is old-growth forests and riparian areas

Direction for maintenance of diverse seral stages over time is included in the Regional Planning Guide (pages 4-22 to 4-27) Section 4.F.2a of the Regional Guide directs that Forests will maintain **at least** 5 percent of every major vegetation type in each of 5 to 7 seral Stages over time **as** described below. When seral stages do not presently meet this condition, Forests are to manage to achieve prescribed levels as soon as practical (Sec 4.F.2.c). These **diversity** standards are to **be** applied at the Forest level. Individual management areas will provide distributions of various vegetation types (including old-growth forests) in proportion to their current availability unless standards and guidelines are developed to assure adequate distribution of seral stages (Sec 4.F.2.e). The seral stages identified in the Regional Guide are:

Seral Stage	Description
1	= Grass/forb stage, consisting of annual and perennial grasses and forbs, with or without scattered shrubs and seedlings.
2	= Shrub/seedling/sapling stage, consisting of mixed or pure stands to 20 feet in height.
3A	= Pole/medium tree stage, including larger trees in the size range 20 to 50 feet in height. Total tree canopy cover is from 0 to 39 percent. Stands commonly support a substantial shrub layer.
3B&C	= Pole/medium tree stage, including larger trees in the size range 20 to 50 feet in height. Total tree canopy cover is 40 percent or greater. Shrub layer is variable.
4A	= Large tree stage, corresponding roughly to a mature and overmature classification. Trees generally exceed 50 feet in height, except some of the oak types at lower elevations. Total tree canopy cover is from 0 to 39 percent. Stands commonly support a substantial shrub layer.
4B&C	= Large tree stage, corresponding roughly to a mature and overmature classification. Trees generally exceed 50 feet in height, except perhaps some of the oak types at lower elevations. Total tree canopy cover is 40 percent or greater. Shrub layer is variable
4C-older	= The specific component of the large tree stage that is older and overmature with a total tree canopy cover of 70 percent or greater. Commonly referenced as the old-growth seral stage, these stands should show obvious evidence of decadence

Direction for management of meadows and down logs is currently lacking. The direction and other information relating to riparian area and wetland management are described in the RIPARIAN section of this chapter. Prevailing direction for the remaining important elements of forest **diversity** is described below:

Mature and Overmature Forests - Mature and overmature forests are represented by seral stages 4B/C and older. The overmature stands are commonly assumed to be old-growth forests. However, although a 'Generic Definition and Description of Old-Growth Forest' has been developed by the Washington Office, specific forest type old-growth definitions are in various stages of development. Section 4 F 2 a of the Regional Guide requires that at least 5 percent of the Forest be maintained as overmature or 'old-growth' forests.

Old-growth forests have many values such as biological diversity, wildlife and fisheries habitat, recreation, aesthetics, soil productivity, water quality, and industrial raw material. Old growth is to be managed to provide the foregoing values for present and future generations.

Snags - The Regional Planning Guide (page 4-14) directs that, to the extent possible, each planning compartment should be managed to provide an average of 15 snags per acre. Eighty percent of the snags should have diameters measuring 15 to 24 inches and the remainder should exceed 24 inches.

Hardwoods - Hardwood stands are subject to the same direction for seral stage management described above. Hardwood basal area or canopy closure direction is currently lacking

2. Supply and Production Capacity

The current status of riparian areas and wetlands are described in the RIPARIAN section of this chapter. The current conditions for the remaining important components of Forest diversity are summarized below

Snags - An accurate snag inventory is currently lacking for most areas of the Forest. Generally, most forested sites on the West slope are believed to meet or exceed prevailing Regional snag retention standards. Most planning compartments in eastside habitats are thought to be deficient in snag densities.

Down Logs - Inventory information for down log densities is almost completely lacking for the Forest. In unmanaged stands, natural occurring densities of large down logs (over 20') probably range from 5 to 20 per acre. In regenerated timber stands, down log densities are typically much smaller.

Hardwoods - The Forest currently has hardwood species on three types of lands. Pure hardwood stands (where conifers comprise less than 10 percent of the crown closure) occupy about 32,400 acres. Hardwood/conifer stands (where hardwoods comprise 51 to 90 percent of the crown closure) are found on about 37,400 acres. Many commercial stands of mixed conifer and westside ponderosa pine also have a hardwood component measuring 1 to 50 percent for an undetermined number of acres.

Black oak and live oak are the predominant hardwood species on the Forest and these species are widespread. Important species that are less common and more localized include tanoak, madrone, aspen, and brewer oak. Forest hardwood stands are important to a broad array of wildlife. Black oak, live oak and madrone are also important sources of fuelwood and livestock forage. The level of hardwood retention in regenerated timber stands is often an issue with timber sale planning because increasing numbers of residual hardwoods lessen the yield for commercial species.

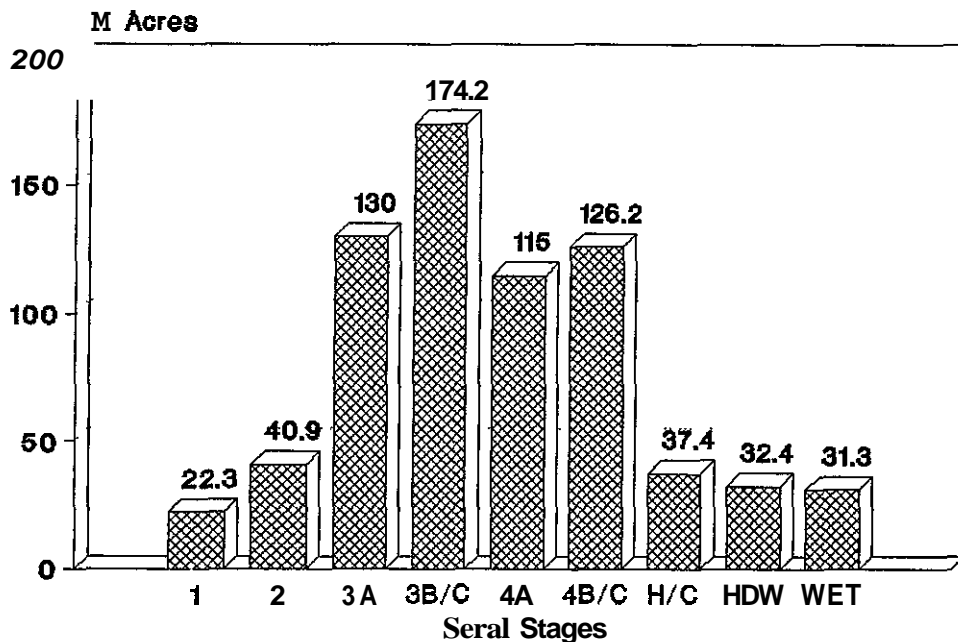
Meadows - The TNF has about 7,100 acres of meadows. On the west slope, meadows are typically small (1 to 5 acres) and are randomly scattered in locations that provide moist, flat terrain. On the east slope, meadows are often very large (20 to 100 acres) and are commonly found on flat sites adjacent to major drainages. On both slopes of the Forest, scattered dry meadows occur randomly where site conditions do not permit establishment of brush and tree species.

Meadows of the TNF are generally in satisfactory condition. They are extremely important to a broad array of fish and wildlife species and provide a significant amount of livestock forage and

opportunity for recreation. Localized meadow degradation from past management practices and natural events offer opportunities for enhancement projects in many areas

Overall Forest Habitat Diversity - Figure 1111 shows the variety and amounts of **the** important diversity components in forested land of the TNF. Approximately 10 percent of the forested land is in early successional stages, (1 and 2), 50 percent is in midsuccession, (3A and 3B/C), and about 40 percent is in the mature stage, (4 and 4B/C). About 4 percent of **the** mature timber is composed of hardwoods, primarily black oaks, (H/C and HDW) and about 4 percent of **the** Forest is wetland (WET). Much of the wetland habitat contains mature aquatic vegetation.

Figure 1111: Quantitative Relationship of Habitat Types for Tahoe NF



The vegetation pattern, at present, is best described as clumped. Patches of early succession vegetation tend to be concentrated in areas that are easily accessed, and sizeable areas of uninterrupted late succession vegetation exist in less accessible areas.

Mature and Overmature Forests - Figure 1111 suggests that about 126,200 acres of the commercial Forests lands are in the 4B/C seral stage. The actual amount of old-growth forest included with this seral stage cannot be determined until (1) measurable minimum standards are defined for old-growth forest conditions, and (2) old-growth stands are inventoried and mapped in accordance with the definition.

Production Capacity - The Forest has the potential for providing a broad range of diversity conditions. Reducing timber harvest and increasing the fire suppression program would yield a forestwide shift towards mature vegetation stands. Conversely, increasing timber harvest and prescribed fire programs while reducing fire suppression efforts would result in a shift towards younger seral stages.

3. Existing and Projected Demand

The current and future demand for forest diversity is very difficult to assess because a consensus definition of diversity is lacking. The NFMA regulations define diversity as 'the distribution and abundance of different plant and animal communities and species'. However, the diversity issue on the Tahoe National Forest is most strongly associated with important habitat elements such as snags, down logs, hardwoods, riparian habitats, meadows and meadow edges, wetlands, and old-growth forests.

It is clear that diversity is an emerging issue in forest management. Yet, prevailing information is insufficient to allow an accurate assessment of the current and future demand.

4. Need and Opportunity for Change

- A. There is a need to incorporate Forestwide diversity standards to maintain desired distribution and abundance of plant and animal communities.
- B. There is a need to develop and implement management programs for hardwoods, riparian habitat, meadows, wetlands, snags, down logs, and old-growth forests as appropriate to satisfy the needs of management indicator species (MIS) and other resource programs
- C. There is a need to develop a consensus definition of old-growth and to inventory and map the location of old-growth stands in each forest type.

FORAGE

1. Current Management Direction

The forage resource currently is being maintained and improved on 46 grazing allotments on the TNF. Each allotment is managed by its own specific management plan, which identifies forage capabilities, number and class of livestock, season of use, management strategy, management system, range potential opportunities, and problems or conflicts. Range management plans are revised and updated every 10 years, or as dictated by changes in resource conditions. In addition to the allotment plans, annual operating plans are developed between the permittees and the Forest Service.

Permittees are normally required to maintain range improvements. Portions of the Sierra Crest Sheep Allotment and the French Meadows Cattle Allotment are located within the Granite Chief Wilderness. The majority of the area is used by sheep through an extensive management system, starting at the lower elevations on July 15 and ending the season on September 30. Cattle use the northwestern portion from late August until the end of September. Management systems were developed for both allotments to permit the livestock to use the forage in harmony with the high recreation use of the area.

Because of the large amount of intermingled private lands, the TNF administers these private lands for grazing through waived term private land grazing permits.

Three management strategies employed on the TNF are (1) intensive management of the environment and livestock, (2) extensive management of the environment and livestock, and (3) environmental management with livestock. Table 1118 summarizes the current range allotments and strategies.

TABLE 1118 - SUMMARY OF CURRENT RANGE ALLOTMENT MANAGEMENT STRATEGIES ON THE TNF

Management Strategy	Number of Allotments	NFS Acres	Private Acres	% of Total Allotment Acres
Intensive	7	132,120	31,635	33
Extensive	33	162,574	160,509	64
Environmental	6	15,754	50	3
TOTAL	46	310,448	192,194	100

2. Supply or Production Capability

The forage supply consists of transitory and permanent range. Transitory range is created by vegetative manipulation, primarily from wildland fires and timber harvesting. Transitory range occurs primarily on the western, lower elevation slopes. The permanent range consists of high mountain meadows throughout the Sierra Nevada crest and in the eastside pine forest types. Improved vegetative management systems on existing range allotments and structural range improvements have increased the grazing use and improved vegetative conditions on the TNF in the last decade. Currently the TNF has two closed allotments. Not all of the capable, available, and suitable transitory ranges are being fully used by domestic livestock. The primary vegetation used by livestock on these transitory ranges is *Ceanothus integerrimus* (deer brush).

There are 34 ranches and approximately 44 families who depend on TNF grazing allotments for a portion of their operation. Thirteen of these families live in the Sierra Valley. The rest of the ranchers are based in Nevada City, Auburn, and the Sacramento Valley. Some competition exists between livestock and wildlife, particularly in riparian areas.

By intensively managing all capable, available, and suitable rangeland, the estimated range biological potential of 60,000 AUMs could be achieved.

3. Existing and Projected Demand

Demand for forage should increase as private grazing lands are further reduced and as the cost of grain and other economic factors increase, the demand for range-fed rather than grain-fed meat should also increase. Part of this demand, especially from Sierra Valley, is not only to produce meat but also to continue family ranches and to maintain community stability and a way of life.

4. Need or Opportunity for Change

Under the current management direction, the highest permitted AUM production would be achieved during the second decade but would decline throughout the following three decades (see EIS, Chapter 4, RANGE, Alternative CUR). The emphasis is to (1) increase AUM's from existing allotments, and (2) use the transitory ranges in harmony with other resource needs and objectives by grazing

plantations both within and outside existing allotments. Research studies are also needed to evaluate the site potential of the eastside pine forest type for dual use (timber and forage).

Riparian zones will be protected from overuse through grazing system design.

The potential for increasing production to meet demand is limited. Under current management direction this production would only partially meet demand.

RIPARIAN AREAS

1. Current Management Direction

General direction for the protection of riparian areas is contained in various Forest Service manuals and handbooks. More specific direction is provided in the Forest Riparian Area/SMZ Guides (Appendix F), S&G's 46 and 47, and certain BMPs (Appendix E). Policy is to avoid or minimize any activities that could adversely affect riparian area dependent resources. Where the riparian area impacts are unavoidable, such as where roads cross stream courses, mitigation measures are adopted that minimize the impacts to acceptable levels.

The following are riparian area management objectives on the TNF

- A. Manage riparian areas to retain or enhance their productivity for riparian area dependent resources. Riparian area dependent resources include fish, wildlife, water, riparian vegetation, riparian related aesthetics, and water-oriented recreation.
- B. Riparian area dependent resources are to take precedence over non-dependent resources within riparian areas. Non-dependent resources include timber, livestock, minerals, non-water recreation, and transportation. Where there is a conflict it is to be resolved in favor of the riparian area dependent resource; the most limiting riparian area dependent resource is to dictate the amount of activity allowed in riparian areas. Standard and Guidelines 46 and 47 provide the management direction for protection of riparian areas. The basic direction is to protect the existing riparian areas (including a minimum 100-foot horizontal strip along either side of all perennial streams) and to improve riparian areas where possible.

2. Supply or Production Capacity

Riparian areas consist of the aquatic ecosystem, the riparian ecosystem, floodplains, wetlands, and the first 100 feet of streamside management zones on either side of perennial streams. Since there is an overlap between riparian areas and SMZs, and since the ultimate purpose of SMZ's is to protect riparian values, they are discussed together.

The aquatic ecosystem consists of about 1,500 miles of perennial streams, totaling nearly 4,000 acres of surface water, and about 20,000 surface acres of lakes and reservoirs within the Forest boundary. About 70 percent of the streams (1,050 miles or 2,800 acres) and about 10,300 of the lake surface acres are under NFS's management.

The riparian ecosystem/wetlands areas total about 54,200 acres within the Forest boundary. Approximately 32,000 acres of these are NFS lands. These vary in size from less than one acre to hundreds of acres of open, wet meadows. They occur mostly on the east side of the Sierra Nevada Crest, and above 5,000 feet elevation on the west side. More specific information (acres, etc.) for wetlands is included in the Forest planning file. Acreages can be isolated and summarized by NFS watershed, sub-watershed, compartment, range allotment, Ranger District, county, and capability area. Acreages can also be summarized by analysis area and management area.

Floodplains associated with large rivers (Class I streams as defined in FSH 2509.22 Chapter 30) total about 4,600 acres, most of which are NFS land. These floodplains are adjacent to the main stems of the North, Middle, and South Yuba Rivers, the North and Middle Forks of the American River, and the Truckee and Little Truckee Rivers.

Streamside management zones (SMZ's) comprise about 47,800 acres adjacent to perennial streams on NFS lands. About 38,700 acres of these are part of the TNF's capable forest land, representing 6.0 percent of the productive forest land base. Since drainage density is greater west of the Sierra Crest, the SMZ protection acreage is also greater here. The amount of SMZ acreage needed adjacent to intermittent and ephemeral streams is undetermined (although not technically regarded as riparian areas, these SMZ's directly affect water quality and other dependent resources in downstream riparian areas); intermittent and ephemeral SMZ widths are routinely identified during project-level planning in response to specific proposals.

When correcting for acreage overlap, there are about 85,000 acres of NFS perennial SMZ/riparian area on the TNF. This represents 11 percent of the Forest area.

The condition of riparian areas on the TNF is generally very good. Water quality is generally quite high, indicating that the aquatic ecosystem is in good condition. The exceptions are some sedimentation problems relating to abandoned hydraulic diggings, some roads, recent wildfires, and logging on sensitive sites (refer to the "Water" section of this chapter for a more detailed discussion). Floodplains, the riparian ecosystem, and wetlands are also in good condition with some exceptions such as Carman Creek and a few isolated problems of streambank compaction and erosion caused from grazing.

Many important resources, including about 20 species of fish, some wildlife, and certain vegetation communities, depend totally on riparian areas for their existence. Approximately 70 percent of the 387 vertebrates occurring on the TNF either depend directly on riparian areas or use them to some degree.

Other important resources and values associated with riparian areas on the Forest include groundwater recharge, moderation of peak flows, forage production, cultural resources, timber, and recreation.

3. ***Existing and Projected Demand***

Public demand will continue for the protection of riparian areas and the dependent resources and activities associated with them, such as fisheries and water-oriented recreation. Demand for commodity production in riparian areas will be subjected to riparian area dependent resource needs. Certain recreation demands (including OHV use and ski area developments) could create local conflicts.

4. ***Need or Opportunity for Change***

Timber harvest will be minimal in riparian areas compared to past intensive management. Grazing will be continued, provided watershed, fishery, wildlife, and recreation values can be maintained. On a limited basis, some streams may be fenced, but generally the emphasis will be to control grazing impacts through permit administration and improved range management.

New campgrounds will be excluded from riparian areas. As opportunities arise, undeveloped camping areas that intrude into or adversely affect riparian areas will be moved or improved to correct vehicle and camping impacts. In the Granite Chief Wilderness at heavily impacted recreation sites, riparian ecosystems will be rehabilitated as funds and opportunities arise.

In addition to improving the condition of riparian areas by better coordination with other resource activities, the Forest can take advantage of opportunities to do more direct habitat improvement in riparian areas. This applies especially to planting new species where diversity can be enhanced.

TIMBER (INCLUDING CHAPARRAL AND WOODLANDS)

1. Current Management Direction

The current timber management program is directed by the 1978 Tahoe National Forest Timber Management Plan. This program was developed considering lands capable of producing more than 20 cubic feet per acre per year and includes direction for harvesting, silvicultural systems, fuelwood, and elimination of current reforestation and timber stand improvement needs. The goals of this plan are to maintain or increase the optimum yields of forest products while maintaining or improving other resource values. Timber management objectives depend mainly on the use of even-aged silvicultural systems. The current direction emphasizes the regeneration of poorly stocked stands, followed by reforestation. Special cutting, such as group or individual tree selection, is applied to lands identified as sensitive to visuals or near popular lakes and streams. About 21,000 acres are scheduled for reforestation to eliminate the existing reforestation needs.

About 10,000 acres also have been identified as needing precommercial thinning; 26,000 acres are identified as needing release. Another objective of the timber program is to provide fuelwood to the public. Programmed annual harvest under the 1978 Timber Management Plan is approximately 147.6 million board feet (MMBF) per year until 1990.

The current direction will produce a forest of greater diversity than now exists. This diversity will include a mosaic of even-aged stands of mixed conifer, red fir, lodgepole pine, and Jeffrey pine. The current goal is to achieve equal areas of relatively the same age separated by 10-year age classes. These age classes will range from 0 to 170 years for mixed conifer and 0 to 200 years for red fir and eastside pine.

Forest Pests. Competing vegetation and animal damage in young-growth stands, and insect and disease pest complexes, including bark beetles, dwarf mistletoes, and mot diseases (primarily *Fomes annosus*), are the main pests on the TNF. An Integrated Pest Management (IPM) approach, which recognizes pest management as an integral part of timber and other resource management, is used to prevent or reduce unacceptable pest-related damage.

Chaparral. Two-thirds of the chaparral lands on the Tahoe National Forest occur in scattered parcels of less than 100 acres (Table 1119). About 8 percent are in areas needing reforestation and another 11 percent are on slopes greater than 50 percent. The steep slopes and shallow soils of these lands severely limit management.

Woodlands. Woodlands on the TNF occur throughout the Forest and are defined as forested land not suitable for timber production. These forested lands provide opportunities for important wildlife habitat, fuelwood energy, vegetation diversity, and other multiple use considerations. Forested land considered as woodlands include the following acres by forest type, see Table 111.10

No estimate exists of woodlands that are not presently managed for sawtimber, such as lands growing oak, pinyon-juniper, or low-ste conifers. A complete assessment of these lands and their potential for providing other renewable resources is needed.

2. Supply or Production Capability

The timbered lands on the TNF are classified into the following major forest types: mixed conifer, red fir, eastside pine, lodgepole pine, hardwood-conifer.

Land administratively withdrawn from timber production by the Chief of the Forest Service or higher authority are the North Fork American Wild River, the Granite Chief Wilderness, and the Onion Creek Experimental Forest. This land is not available for timber production. A total of 18,246 acres of capable land is removed from timber production for all alternatives, leaving a maximum of 629,018 acres of land considered as tentatively suited. The disaggregation by forest type is displayed in Table 111.11.

Because terrain affects the type of timber harvest system that can be used, the TNF has identified four major slope groups for analysis: 0 to 30 percent slope (293,869 acres), 31 to 50 percent slope (310,765 acres), 51 to 70 percent slope (145,602 acres), and 70+ percent slope (44,132 acres). The majority of timber sites on the TNF are capable of growing more than 85 cubic feet of wood fiber per acre per year.

Currently, intensive forest management is practiced on approximately 306,000 acres of the TNF. Fuelwood consumption increased until the early 1980's. In recent years demand has fallen to approximately half the 1983 level. This trend can be attributed to lower energy costs for home heating and less interest in fuelwood gathering since the peak of the energy crisis. Restriction on the use of wood stoves in the Reno area have contributed to lower fuelwood demand on the eastside of the Forest. This gathering is usually limited to fuelwood available within 500 feet of roads. Fuelwood is provided by logging slash and precommercial thinning material.

Approximately 400 MMBF is currently under contract to be harvested. This represents 2.7 times the existing annual programmed allowable harvest of 147.6 MMBF. This amount of volume under contract is greatly reduced from 5 years ago and is about normal for present market conditions.

A detailed discussion of timber land suitability is in the EIS Appendix K.

3. Existing and Projected Demand

The demand for wood fiber is measured by the sale of timber products. Timber sales are sold by sealed bid or at an oral auction preceded by a sealed bid. Advertised selling price (\$165/MBF for the 4-year period 1979-82, expressed in 1982 dollars) is determined by an analytical appraisal of the timber to be sold, allowing for logging and manufacturing costs. The appraisal considers needed post-sale cultural treatments to the sale area following the harvest. Over the past several years, the actual selling price has been greater than the minimum advertised bid price. Bid prices for timber sales have averaged over three times the Forest Service appraised rates. Previously, fuelwood was either sold or available through free use permits. The use of fuelwood as an alternative household energy source has significantly altered fuelwood demand in recent years. In 1982, the TNF began charging minimum rates for most fuelwood. A minor amount of free use is still permitted.

There are 12 mills located within 50 miles of the Forest boundary that have purchased wood from the TNF within the past 5 years. These mills have an annual processing capacity of about 500 MMBF. With a programmed harvest of 147.6 MMBF, the TNF supplies approximately 30 percent of these mills' capacity. The remainder of the capacity is obtained from private land, BLM, and adjacent National Forests. About 165,000 acres of private land within the TNF is zoned by counties as Timber Preservation. This zoning requires owners to prepare a forest management plan describing the purpose for retaining these lands for timber production. These lands contain over 40 percent of the private land acreage within the TNF. This indicates that demand for wood fiber from private lands, as well as from NFS lands, must be considered in combination.

Vegetative Type	Number of Capability Areas	Acres
Brushland capable of reforestation	210	6,439
Areas less than 100 acres	1,758	53,748
Areas larger than 100 acres with slopes over 50 percent	43	8,453
(BS) Basin Sage, Bitterbrush, Mountain Mahogany with Perennial Grass, and Wyethia	40	6,607
(CH) Huckleberry Oak, Wyethia, Forbs, Perennial Grass	15	2,397
(CW) Whiteleaf Manzanita, Deerbrush, Bear Clover	7	1,141
(CG) Tobacco Brush, Whrtethom, Green-leaf Manzanita, Huckleberry Oak, Wyethia	3	392
(HG) Whiteleaf Manzanita, Annual Grass, Forbs	1	136
TOTAL	2,077	79,313

Forest Type	Acres
Live oak and associated hardwoods	26,483
Black oak, tanoak, and madrone	5,881
Knobcone pine	285
Digger pine	139
Juniper	1,534
Aspen (pure stands larger than 10 acres)	75
TOTAL	34,397

TABLE 111.11 • MAXIMUM ACRES AND PERCENT OF LAND TENTATIVELY SUITED FOR TIMBER PRODUCTION

Forest Type	Acres	Percent
Muted Conifer	361,797	57.5
Red Fir	100,818	16.0
Eastside Pine	104,281	16.6
Lodgepole Pine	9,041	1.5
Hardwood-Conifer	36,660	5.8
Reforestation and TSI Needs	16,256	2.6
TOTAL	629,018	100.0

The future demand for wood products will be primarily for sawlogs. Demand may shift to more total wood fiber rather than sawlogs. Local demand for sawlogs will follow the trends in the Nation's housing market. The demand for wood fiber should rise and not be as cyclic as the sawlog demand. The demand for fuelwood should fluctuate with the cost of home heating energy sources such as natural gas and electricity. Air quality standards may also affect future fuelwood demand. The demand will focus on easily obtainable fuels near population centers.

Local communities that have a partial dependency on wood products include Loyalton, Foresthill, and Truckee. As with many small mountain communities throughout the western U.S., local economies depend to a large degree on jobs related to timber management.

4. Need or Opportunity for Change

An opportunity for increased production and use of wood fiber exists. Harvest priorities need to change from cutting poorly stocked stands to cutting a combination of poor and better stocked stands; this change is needed to increase the economic efficiency of offered timber sales.

Lands currently allocated to special component status on prime forested land could be reallocated to intensive forest management. Most lands that were identified as roadless in RARE II are included in the total land base calculations for the current programmed allowable harvest.

Rotation ages for the regenerated stands are currently 50 to 170 years for the mixed conifer forest type, and 50 to 200 years for the red fir and eastside pine forest types. The maximum rotation age will lower on intensively managed lands because economic considerations are emphasized in the land management linear program (FORPIAN). Rotations should be 50 to 120 years for mixed conifer and 70 to 120 for eastside pine and red fir. On lands where longer rotation ages are desired for other resource values, rotation age would be 150 years maximum.

Chaparral. Of the 10,673 acres that could be managed as chaparral, over 60 percent is east side rangeland. Thus, only 4,066 acres of shrublands are in parcels of over 100 acres and with slopes less than 50 percent that could be managed for chaparral. Some of these lands are now managed for wildlife habitat. The current management of these lands for forage and wildlife habitat represents the best opportunities available for management.

Chaparral lands do occur adjacent to the TNF along the west boundary at lower elevations. Management of these private lands through coordinated resource planning benefits adjacent TNF lands. This coordinated planning occurs when requested by adjacent landowners or affected State agencies, such as the California Departments of Fish and Game or Forestry.

Woodlands. The opportunities, costs, and **benefits** of managing woodlands for forage, water, recreation, or wildlife needs to be identified. A Woodland Management Plan will be completed in 1992 (see Appendix B).

WATER

1. Current Management Direction

The water program mission is to afford optimum protection to the water resources compatible with other program practices, including timber, wildlife and fisheries, range, recreation, engineering, and mining. Where opportunities arise, watershed improvement measures will **be** implemented and water quantities and timing of flow will be improved. The water program on the TNF has primarily served **as** a support function for other resource activities. The various types of support include planning, **inventories**, analyzing project proposals, **monitoring**, and administration.

All existing land management practices use the water quality protection measures that are specified as Best Management Practices (BMP's) in the R-5 document 'Water Quality Management for National Forest System Lands in California,' also referred to as the R-5 Forest Service 208 Plan (See also Appendix **E,**)

The water management program emphasizes meeting legal obligations for water quality protection.

2. Supply or Production Capability

The TNF produces approximately 3,244,000 acre-feet of water per year within its boundaries. Of this total, about 2,000,000 acre-feet are produced from NFS land. Because of the complex land ownership pattern on the TNF, these figures are rough estimates.

The Forest Service **is** directed to protect, and **if** necessary, restore NFS watersheds. The Carman Valley Watershed **is** specially identified as deteriorated, therefore, **it** will be managed to protect and restore **its** condition.

About 11,000 to 12,000 acres of the 14,000 NFS acres identified **as** being in a declining watershed condition, not including the Carman Valley Watershed, would be allowed to recover by restricting intensive resource management practices. Physical restoration will be emphasized on the remaining 2,000 to 3,000 acres, which includes channel degradation, meadow erosion, old burns, abandoned hydraulic diggings, and roads. Not all treatable acres are planned for restoration within the first planning period. These acres will be evaluated periodically during the planning period.

Over 105,000 acres of sensitive watershed lands are characterized by oversteepened slopes, very high erosion potential, or instability. This includes about 44,000 acres of land with slopes over 70 percent; 15,000 acres of land with 50 percent or more rock outcrop on slopes of 50 to 70 percent; 43,000 acres of land dominated by lithic and shallow soils on slopes of 50 to 70 percent, 1,000 acres of land dominated by glacial soils on slopes of 50 to 70 percent; and 2,500 acres of land dominated by **granitic** soils on slopes of 30 to 70 percent. About 48,000 acres of these lands are capable of producing commercial timber.

Two significant groundwater basins lie within or adjacent to the Forest boundary, Sierra Valley and Martis Valley. Very little TNF land lies within these groundwater basin boundaries. **Most** groundwater used on the TNF comes from wells **or** springs which tap small isolated underground reservoirs in fractured bedrock or porous rock. The supply of groundwater varies depending on local geological characteristics. **Little** can be done to alter the quantity in most basins. Geologic or geotechnical studies aid in locating the most likely sources for development. The TNF Geologic Resource Inventory (in progress) will specifically address where groundwater basins are located and make recommendations **for** potential future management of the groundwater resources.

Water quality objectives are adequate for most parameters, but sediment and turbidity objectives need to be refined. Research is needed before sediment and turbidity values (particularly sediment) are developed that can be useful for monitoring.

Little potential exists for either significant increases in water yield that is immediately usable, or in overall water quality. Most of the water yield increase that occurs would run off during the normal high runoff period when reservoirs are at capacity. Since the overall water quality of the Forest is currently quite high, the potential to improve this is not significant. However, local improvement to beneficial uses will accrue. Water quality could decrease if management practices and/or BMPs are incorrectly applied.

There are no intentional Forest Service efforts to increase water production on the TNF. Weather modification (i.e., cloud seeding) efforts are occasionally made by various water service and utility districts in the northern portion of the Sierra Nevada. An intensive cloud seeding study was recently conducted by the U.S. Bureau of Reclamation in the American River drainage. This study is called the 'Sierra Cooperative Pilot Project' or 'Project Skywater'.

Any increase in water yield that has occurred because of National Forest efforts is incidental and primarily the result of regeneration cutting and vegetation type conversion. Such increases that occur are local and of relatively short duration. Any program to permanently increase water yield by manipulating vegetation would not produce significant increases in water yield because of several constraints, such as the allocation of prime timber sites to intensive timber management. These areas are the most capable of producing significant long-term increased water yields. Increased water yield will likely continue to be an incidental consequence of other resource management practices. Other activities which might increase water yields, such as weather modification, are not routine National Forest practices.

3. Existing and Projected Demand

The majority of water produced from National Forest System lands is used downstream and off-Forest in Nevada and in the California Central Valley. About 85 percent of water use is for agriculture. Currently, water availability is limited in the Sierra Valley, Deer Creek, and the Truckee-Little Truckee watershed.

The current and projected on-Forest demand is extremely small compared to the annual net production of about 2,000,000 acre-feet per annum (AFA), and the downstream off-Forest demand. The exact off-Forest demand for TNF water in the Sacramento River system is difficult to trace because water from the TNF combines with water from private land and public land, including five other National Forests, the BLM, and State land in the watershed. The off-Forest demand for the Truckee River water already exceeds the current production: the greatest needs are for irrigation in Nevada, maintenance of Pyramid Lake, and municipal/industrial use in the Reno/Sparks area.

Consumptive and nonconsumptive uses are more fully described in the AMS and EIS WATER sections. Conflicts are discussed in the AMS (Chapter 11), and in the EIS (Chapter 3). Future nonconsumptive demands (needs) are spectically unknown; they are dealt with on a case-by-case basis (see Forestwide Standard and Guideline 49).

Groundwater sources are needed to provide safe and relatively constant water supplies for campgrounds and for livestock and domestic use. Groundwater avoids problems of contamination and intermittency that are common with surface sources. Demands are slowly increasing. Total demands are relatively small.

By the year 2030, it is likely that the total Statewide demand for water will exceed current and future supplies needed to meet both consumptive and nonconsumptive uses.

4. Need or Opportunity for Change

A need exists to evaluate the current Forest program of 'no specific water yield increase' by evaluating plan alternatives. This is appropriate considering the current shortages in certain watersheds. However, the tradeoffs with permanent intensive timber management must be considered.

Forest resources, including financing, are needed to improve watershed conditions by correcting sediment sources that are identified in the Forest 208 Plan, watershed improvement needs (WIN) inventory, and soil resource inventory (SRI).

More research is needed on peak flows and on water quality impacts and total water yield associated with a variety of management activities in different vegetative zones

MINERALS

1. Current Management Direction

Mineral resources are managed primarily in response to outside demands. There are four categories of minerals: (1) locatables, (2) leaseables, (3) saleables, and (4) outstanding mineral rights. Management of locatables on public domain lands responds to the 1872 mining laws, with little Forest Service discretionary control. The majority of the TNF is open to mineral entry for locatables. Principal leaseables on the TNF include geothermal, generally found on the east side of the Sierra, and locatable minerals, found on those acquired lands without public domain status. Saleables include common varieties, such as sand and gravel, which are usually sold in response to outside requests and not on a planned basis.

Mineral activity on the TNF is managed by providing mitigation and rehabilitation measures in the plans of operation or stipulations in leases and permits

The prospecting, locating, and development of mineral resources within National Forests is authorized by the Organic Act of June 4, 1897. The Act also allows the Secretary of Agriculture to establish rules and regulations in connection with operations authorized by mining law. These regulations, which minimize impacts on the resources or define procedures, can be found in 36 CFR 228 (locatable minerals and disposal of saleable mineral materials) and 293.14 (mineral leases and permits in wilderness).

Generally, the authority to manage locatable and leaseable mineral resources is retained by the Secretary of the Interior. Agreements, embodied in memorandums of understanding between the Secretaries of Agriculture and the Interior which share various work processes, are found in FSM 1500, External Relations. The authority for the management and disposal of mineral materials (including but not limited to common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay) is with the Forest Service.

The detailed authorities and direction for locatable minerals, mineral leasing, and mineral sales are in FSM 2800, Minerals and Geology. All withdrawals of public lands from mineral entry are subject to the requirements of the Federal Land and Policy Management Act (FLPMA) of 1976. The Bureau of Land Management determines policy and procedures for withdrawals of public lands. That policy states that "withdrawals are to be allowed only where there is a definite 'showing of need' and where analysis has shown that no alternative approach would meet this need." Among the factors to be considered are the uniqueness of resource values and the ability of the site to tolerate surface disturbances. The Forest Service requires that, where feasible, all mining operations be conducted to minimize adverse impacts on surface resources (36 CFR 228.8).

2. Supply or Production Capability

The western side of the TNF is highly mineralized. This area includes the historic Northern Mines gold mining region (Downieville to Placerville). The primary minerals are gold (which includes placer mining in the major rivers, the deeply buried channel gravels previously mined by hydraulic methods,

and the deep veins mined by hardrock methods), barite, chromite, silver, iron, and aggregates, such as sand and gravel. No deposits of fissionable minerals are known on the TNF. No known potential exists for energy mineral development except for a low potential for geothermal on the east side of the TNF near Sierraville.

The supply of all mineral resources is fixed and unknown until exploration and development occur. Mineral potential for various areas of the Forest is displayed on a set of overlay maps in the planning records.

3. Existing and Projected Demand

No value has been determined for the mineral resource of the TNF because of the nature and volume of minerals produced on the TNF. Locatables are managed according to 1872 mining laws which give individual mining rights without requiring payment to the Federal Government. Because only a small volume of leasables and saleables exist on the TNF, evaluation of these would not be meaningful.

Demand for minerals is dependent on nationwide and often worldwide markets. High demand is apparent from the amount of mining claim activity, particularly placer claims along the major rivers. Demand is expected to increase for most minerals. This demand is outside the scope of this analysis.

4. Need or Opportunity for Change

As the scale of mining activities increases from prospecting and exploration to development, considerably more time and effort will be required to administer the operations because of the greater potential for serious environmental impacts. A continuing effort should be made to provide timely response to lease applications, notices of intent, and plans of operation. All applications will be evaluated on the merits of the individual project.

The Forest has analyzed mineralization, based on available nonproprietary information and professional expertise (refer to Mineral Potential Map: planning records 1920.16a.7d.). This analysis includes an estimate of potential conflicts between minerals and other resources (refer to Chapter 4 of **EIS**). Maps of the reserved mineral rights are too voluminous to be included in the EIS (refer to planning records, 1920.16a d).

HUMAN RESOURCES

1. Current Management Direction

The mission of the human resource programs on the TNF is to improve the welfare of underprivileged members of society, to enhance the quality of life in the TNF's area of influence by benefiting both the human and natural resources, and to expand public understanding of environmental conservation. Human resource programs include the Comprehensive Employment and Training Act, Senior Community Service Employment Program, Youth Conservation Corps, Young Adult Conservation Corps, and the Volunteer program. During fiscal year 1980 these programs accomplished \$1.6 million worth of resource improvement-related work on the TNF. The TNF hosts these programs by providing employment opportunities and supervision. Enrollees in these programs are subsidized by funds Congress has allocated for operation of each specific program. The current Administration (Congress and the President) has elected to gradually phase out most of these programs; therefore, the TNF anticipates very little benefit from these programs. Assuming past practices will continue, the TNF will use whatever human resource program is authorized and funded to achieve objectives of the TNF and the program.

The Urban and Community Development Program provides both research and technical assistance through the State of California for the improvement of natural resources on private lands, such as Coordinated Resource Management Planning and Resource Conservation and Development Areas. The TNF helped develop and actively supports the High Sierra Resource Conservation and Development area.

2. Supply or Production Capability

Communities surrounding the TNF provide a sufficient population base from which to draw the needed skills for the resource programs. The number of participants in these programs depends on circumstances beyond Forest Service control, including State and Federal funding, and the economic and social situations in adjacent communities

3 Existing and Projected Demand

Human resource programs are not a substitute for regular Forest Service employees needed to meet program objectives. In most cases, the purpose of these programs is to provide supplemental work or training. This type of demand is expected to continue, although the funding is expected to decrease.

4 Need or Opportunity for Change

Opportunities for use of the human resources program will continue. No need exists for change in current management direction.

OWNERSHIP, LAND USES, AND URBAN/RURAL/WILDLAND INTERFACE

1 Current Management Direction

The main functions of the lands program on the TNF are land adjustment and property management. The goal of the land adjustment program is to achieve the optimum land base necessary to facilitate resource management practices. The landownership adjustment program is guided by the Master Forest Land Ownership Adjustment Plan (planning records 1920 16a7c) for the TNF and specific purchase composites in certain critical recreation areas. Subsequent composite and adjustment program updates will be based on the direction established by management area in this Forest Plan.

The goal of property management is to permit special uses only where it is clearly demonstrated that no other alternative exists except to allow that use on TNF lands. When permitted, these uses must be compatible with TNF land management practices.

The intermingled ownership pattern will continue to exist on the TNF and, in many cases, is the most desirable situation. Large private ownerships in noncontiguous blocks will continue to provide opportunities for public recreation.

The RPA target for the landownership patterns and land use issues is for land line location. To mark and post the total of 2,796 miles of boundary on the TNF by the fifth decade, an average of approximately 69 miles per year must be accomplished.

Because of the substantial amount of acquired land and intermingled ownerships on the TNF, considerable opportunities exist for survey problems, title claims, and trespass. Primary emphasis has been and will continue to be on prevention. Boundary marking and posting is an important prevention tool. Priority for resolving existing cases will continue to be based on the potential for resource damage and interference with resource management programs.

One major existing transportation and utility location exists on the TNF. This is identified in the PSW Regional Guide as 'Donner Pass, Tahoe NF.: Interstate 80 Corridor.' The Donner Summit corridor includes the following facilities:

- o Four-lane transcontinental (Interstate 80) highway.
- o Southern Pacific transcontinental railroad.
- o Transcontinental and local telephone lines.
- o Southern Pacific high-pressure petroleum pipeline.
- o Variety of parallel electrical transmission lines.

This corridor is up to one mile wide, contains considerable private land, and can support additional uses. There is an opportunity to expand and upgrade existing facilities to meet future demands.

National Forest SYSTEM lands within the urban/rural wildland interface situation are intended to be managed for multiple use purposes, while at the same time working cooperatively to meet the needs and concerns of neighboring landowners

2. Supply or Production Capability

Theoretically, most NFS lands, unless previously withdrawn for specific purposes, are available for special-use permits or land adjustment. The TNF has identified specific areas that have priorities for disposition. The TNF has also identified specific areas with priority for acquisition of private lands. About one-third of the land within the boundaries of the TNF is private, or in non-Federal ownership. The majority of these ownerships are small (less than 1,500 acres). Development pressures will continue to increase on the intermingled private lands. More residential use will likely intensify conflicts with resource management on NFS lands and create Urban/Rural Wildland Interface situations. Actually, intermingled landownerships only produce the conflicts described in the issue statement if the landowners manage their land for incompatible objectives and uses. For example, if adjacent private and TNF parcels are managed for timber harvesting and multiple-use objectives, once the boundaries are established and roads are built, problems diminish. If one party or the other decides to manage for a noncompatible use, then conflicts occur.

The potential exists for hydroelectric power on the TNF. Actual development depends on future fuel and electric rates. Over a dozen applications have been received in a single year, with as many as five applicants for the same site. All proposed hydroelectric operations are processed through the Federal Energy Regulatory Commission.

3. Existing and Projected Demand

A continuing demand exists for land adjustment activities such as land exchanges. Approximately 20 land adjustment proposals are received by the TNF annually. Some 10 to 100 requests for special uses of NFS lands are received each year. Demand for land exchanges is expected to remain the same, or to increase. Demand for special land uses will remain high (partially as a function of the intermingled ownership pattern). As more private lands are developed, demand will increase for roads, water systems, utilities, and other services on TNF lands. Utility companies feel there is a need for additional utility corridors to transport power from the east.

Within the urban/rural wildland interface there is a continuing demand for resource outputs, such as timber, as well as demand for amenity values such as visual quality, wildlife, water quality, and air quality.

Over time it is expected that more and more of the private land will subdivide and more homes will be built on private land. This increase in homes and subdivisions will translate into more situations of urban/rural wildland interface. The rate of growth will depend on County government policies, population increases, and economic growth.

4. Need or Opportunity for Change

Current management direction is adequate to handle the needs of the lands program. Funding has been a major problem in the past, but this issue is beyond the scope of this Forest Plan.

As long as boundary line marking and posting can be coordinated with viable on-going activities, such as the timber sale program, considerable progress can be made in achieving the RPA targets. Considerable concern exists, however, that funding will not be available to survey those lands which are not capable of providing revenue-producing commodities. Funds must be made available to survey this type of property to continue to meet the RPA goals.

A continuing effort must be made to timely process applications for land uses and land adjustments. Because of the increasing concerns about the effects of land-use activities on public land, an increased level of administration of these uses must be provided.

Future utility corridor proposals will require a detailed project-level environmental analysis that identifies required mitigation. Current direction only excludes corridors from the Granite Chief Wilderness, the North Fork American Wild River, Onion Creek Experimental Forest, and potential Research Natural and Special Interest Areas until an environmental analysis is completed.

Urban/rural wildland interface management direction needs to recognize the necessity for higher than normal levels of public involvement, increased potential for special mitigation measures, and potential for reduced level of resource outputs. Management direction needs to specify a process of issue resolution on a case-by-case basis

Management direction and guidelines need to emphasize the opportunities for the Forest to cooperate with local, State, and Federal agencies in joint planning processes and other cooperative ventures in the urban/rural wildland interface. Management direction or guidelines need to indicate ways the Forest can educate the public about urban/rural wildland interface resource management issues.

SOILS

1. Current Management Direction

Forest Service direction is to design and implement management practices that maintain or improve the long-term inherent productive capacity of the soil resource; to plan and conduct soil quality monitoring to determine whether soil management objectives, standards, and guidelines are being achieved; and to use the results of monitoring to evaluate resource management actions and recommend mitigation measures or changes in practices to prevent significant impairment of long-term soil productivity

2. Supply or Production Capability

One estimate of soil productivity is timber site class, a measure of timber growth. Site class 1 is the most productive and site class 6 is the least productive. A summary of the 1980 Forest timber inventory, updated to reflect the current landbase, lists zero acres in Forest Survey site class 1; 3,918 acres in site class 2; 250,097 acres in site class 3; 195,899 acres in site class 4; 168,441 acres in site class 5; 28,919 acres in site class 6, and 147,110 acres as noncommercial for timber management purposes.

Soils on approximately 23,000 acres of capable forest land have been inventoried as "altered". These are lands where past management activities have displaced all or a portion of the topsoil into windrows. There is a potential at some point in the future management of these lands to respread the topsoil from the windrows and reclaim some of the lost productivity.

3. Existing and Projected Demand

Demands on the soil resource will increase as more land is intensively managed. Increases in the amount of silvicultural prescriptions for clearcutting, broadcast burning, mechanical site preparation, and mechanical or hand treatment of competing shrubs and forbs, all have potential impacts on the soil. These activities can reduce soil productivity by loss of soil through displacement or erosion; loss of organic matter by burning or biomass harvest; and by loss of soil porosity by compaction

or puddling. Forestwide standards and guidelines have been developed to reduce the risk of a loss in soil productivity by effects on these soil qualities.

4 Need or Opportunity for Change

The results of monitoring the effectiveness of Forestwide standards and guidelines may identify the need to revise the standards and guidelines, or to modify a Forest activity, practice, or mitigation measure

Identification of potential soil management concerns during the environmental analysis of proposed projects may identify the need for an Order 2 soil survey, which is a more detailed soil inventory than the Order 3 Soil Resource Inventory currently available for the Forest.

FACILITIES

1 Current Management Direction

Forest facilities include roads, trails, dams, and administrative sites, including utility system and buildings. Facilities provide support for Forest management activities such as timber production, fire protection, and recreation

Administrative buildings and sites are developed and operated to meet resource program needs at strategic locations. Existing sites and buildings provide housing and office facilities for personnel involved in resource development, recreation, and fire protection. Location of sites has been influenced by access roads and travel times, the need for interaction with local government, visibility to the public, and availability of community support services

Development and operation of the Forest road system are currently directed by two plans: the TNF Arterial/Collector Transportation Plan, approved by the Regional Engineer October 1978, and the Transportation Management Program approved in June 1980.

2 Supply or Production Capability

The TNF transportation system has developed from both private and TNF land management activities over the past century. The system is limited by steep, rocky river gorges that divide gentle ridgetops. Because of this limitation, interconnections between arterial corridors are few. The collector road system generally extends from the arterial roads to secondary ridges or inner gorges. Local roads access specific resource sites.

The existing maintained road system under Forest Service jurisdiction contains over 2,400 miles of roads. An additional 850 miles are under the jurisdiction of counties, the State, or are controlled by private landowners. With multiple jurisdictions and many rights-of-way needs, development or management of the road system is complex and requires extensive coordination with other agencies and private landowners. The responsibility for existing traffic has been a significant issue in negotiating cooperative road developments. Agreements with three landowners have been initiated under a Master Agreement, with supplements to define shared costs, specifications, and plans

The road system under Forest Service jurisdiction is currently regulated for commercial use; a portion of the system is closed yearly or seasonally to public vehicular use. Closures protect the roadbed from damage during the wet season, protect critical wildlife habitat and other resources, reduce maintenance costs, and eliminate user conflicts. Closures have not always been compatible with desired OHV uses, dispersed recreation uses, and private land uses

The average existing density of road access on the TNF is approximately 3.8 road miles per square mile; the greatest density is 6 road miles per square mile. All NFS lands are physically capable of supporting road or trail construction. Appropriateness of road or trail construction is an economic rather than a technical question. Eighteen specific issues relating to the road system are discussed in the TNF AMS.

The existing trail system on the TNF comprises 508 miles. Types of trail use include hiking, equestrian, motorcycle, and 4-wheel drive. About 97 miles of the Pacific Crest National Scenic Trail crosses the TNF from north to south, and the Western States Trail crosses from east to west through the Forest Hill and Truckee Ranger Districts

Administrative work centers and offices were constructed to facilitate land management practices. Currently, 125 Government-owned buildings are on the TNF, with a total of 165,000 square feet. Nearly 50 percent of the buildings were constructed prior to World War II. Only 9 buildings, primarily residences, were constructed since 1966. Because the life expectancy of a wood structure is about 40 years, over 50 percent of TNF buildings will reach replacement age before 1990. To meet the rising demand for office space, conversion of some existing residences has been recently completed. This conversion has compounded the problem of insufficient Government-furnished employee housing and, in several cases, has produced inadequate and low-standard office space. Some of the need for Government investment in office space has been eliminated by renting space for the TNF Supervisor's Office and four Ranger Districts; however, Government ownership would cost half, or less, the rental costs over a 20-year period.

There are 19 dams under National Forest jurisdiction. Half are less than 25 feet high and impound less than 50 acre-feet of water. Fourteen dams have a low hazard rating (minor economic loss, no loss of life), and none has a potential for loss of life and excessive economic loss.

Because roads, trails, buildings, and dams can be built in most places in the TNF, the potential to increase the facilities systems is unlimited. The location of new facilities will be based on economic feasibility and consideration of the other resource management programs on the TNF.

3. Existing and Projected Demand

The public user of the TNF will continue to demand access to NFS land. Commodity production will continue to use transportation routes from the Forest to processing centers.

The demand or use of the transportation system (roads and trails) is highly dependent on the socioeconomic position of the Forest user. Transportation costs and demand are interrelated. Demand by the Forest user and the economic effects of use are contained in the Tahoe National Forest Socio-Economic Overview.

A considerable amount of the traffic occurring in the TNF is to access private land, largely the intermingled ownerships. Private land traffic has increased because of land development and private timber harvesting.

4. Need or Opportunity for Change

The management of the transportation system is currently and adequately guided by the Transportation Management Program. Road development will continue to respond to resource needs. The current decrease in available road investment dollars may reduce road standards, require more intense traffic management, or possibly more road closures.

No change in trail management direction is needed. Development and maintenance should continue to facilitate the dispersed recreational experience.

There should be an assessment of current management direction regarding county road systems. Current direction does not address recent trends reducing investment funding by the Forest Service, declining county maintenance budgets, and increasing subdivision activities on private lands intermingled with NFS lands.

Certain county roads serve no private developments and mainly receive Forest user traffic. These roads receive little or no maintenance, which causes resource and traffic problems. More road management opportunities could occur by transferring these roads to Forest Service jurisdiction.

Where local, intermittently-used Forest Service roads are to be used for subdivision access, jurisdiction and maintenance would be more efficiently performed by the counties. Current direction does not allow the Forest to insist that counties accept Forest Service roads servicing subdivisions. An on-going discussion exists, however, between the Forest Service and the counties concerning mutual transportation management problems.

PROTECTION

1. Current **Management Direction**

The fire management policy on NFS lands is to provide well planned and executed fire protection and fire use programs that are cost efficient and responsive to land and resource management goals and objectives (FSM 5103).

Although fire protection was not identified as a major issue, it relates to several of the major issues and is an underlying premise to successful land and resource management.

The Tahoe National Forest has wildfire protection responsibility for a total of about 1,237,700 acres, of which approximately 774,700 acres are NFS lands, 9,000 acres are public domain lands administered by the Bureau of Land Management (BLM), and about 454,000 acres are State Responsibility Area (SRA) lands. The SRA lands are protected by the TNF under a Statewide contract (cooperative agreement) with the California Department of Forestry and Fire Protection (CDF). Under this cooperative agreement, the Forest Service agrees to protect the SRA lands at a level equivalent to that which the CDF would provide if they were protecting them directly. Alternately, CDF protects about 19,700 acres of NFS lands that are outside the TNF protection boundary but are covered by the Forest plan. These lands are located along the western edge of the Forest.

The current fire management organization is a combination of suppression (initial attack), prevention, and detection resources located at various stations on the TNF. These resources include:

- o 10 fire engines with either 3- or 5-person crews.
- o 15 fire prevention units having 1 person per unit.
- o 5 active lookout towers. (Four additional towers are operated only during lightning activity or high fire danger days.)

Two Regional resources are available for either initial attack or reinforcement use. These resources are a 20-person hotshot crew and a small, fixed-wing aircraft, used primarily for reconnaissance, air attack, and as a lead plane. Additional resources, including fire engines, hand crews, fixed-wing aircraft (including air tankers) and helicopters, are available from TNF cooperators, particularly the CDF and the adjacent National Forests.

Based on the past fire history and the current fire management organization, the expected future average annual acres burned and number of fires by fire intensity levels are displayed in Table 111.12

TABLE 111:2 - FUTURE AVERAGE ANNUAL ACRES BURNED AND NUMBER OF FIRES BY INTENSITY LEVEL

Fire Intensity Level	Average Annual Acres Burned	Average Annual Number of Fires
1	20	80.0
2	73	37.0
3	94	150
4	219	3.0
5	404	0.6
6	228	0.3
TOTAL	1,038	135.9

The TNF fuels management program is primarily concerned with activity fuels created by management activities (especially timber harvesting). The objective of fuel management is to modify or maintain fuel levels that result in the most-cost-efficient fire protection program to meet land and resource management goals and objectives. Whenever a management activity creates a fuel hazard greater than would exist without the activity, an analysis is required to determine the level of treatment appropriate to meet land and resource objectives.

Vegetative cover types are referred to in fire management as fuel models. The representative fuel models are grouped into the four broad categories of timber, plantations, brush/grass, and barren (no vegetation). The acres of these groupings are as follows:

Fuel Model Groups	Acres (Rounded Off)
Timber	604,700
Plantation	35,300
Brush/grass	113,100
Barren	41,300
TOTAL	794,400

Within the timber fuel model group, an estimated 19,000 acres of prior activity fuels are scattered throughout the TNF. These prior activity fuels are being treated primarily through other activities such as timber sales, reforestation site preparation, and wildlife habitat improvement projects.

Approximately 4,800 acres of activity fuels are treated annually on the TNF. This treatment includes about 1,200 acres of broadcast burning.

Within the Granite Chief Wilderness, prescribed fire (planned and unplanned ignitions) may be used where necessary to meet resource and management objectives, if and when a specific prescribed fire plan is developed and approved.

2. Supply or Production Capability

Fire protection is a service and does not produce outputs. The principal activities are the prevention and suppression of wildfires. In addition, fire management is responsible for treating both current and prior activity fuels. Projected treatment needs for current and future timber sale areas indicate that the fuel treatment program will maintain or exceed the 1982 acreage. The prior fuels treatment program should stay at the 1982 level. Wildlife habitat improvement projects involving fuel treatment should increase in the future.

3 Existing and Projected Demand

The demand for protection will increase because the demand for goods and services requires more intensive management and investment. Under current management direction, fire protection will be influenced by the following factors

- A. Fire risk will increase as a result of
 - (1) Increased recreation use, which is projected to be approximately 9,108,000 recreation visitor days by 2030,
 - (2) Increased residential and commercial development, both inside and adjacent to the Forest, and
 - (3) Increased industrial activity (primarily timber harvest, including fuelwood and mining).
- B. Fire hazard will remain constant or be reduced by
 - (1) Treating activity fuels on NFS lands;
 - (2) Increasing the treatment of activity fuels on private lands; and
 - (3) Implementing 'Fire Safe' requirements by State and local governments for development on private lands
- C. The structure and condition of timber stands will continue to change through timber harvesting, reforestation, and timber stand improvement practices. The trend will be to younger, intensively managed stands with a significant increase in acres of plantations.
- D. The use of prescribed fire will continue to increase, but will come under more scrutiny from the public, especially regarding the impact on air quality.
- E. Cooperative fire programs between adjacent Federal, State, and local fire agencies (and adjacent Forests) will be stronger and more coordinated, resulting in more effective and efficient protection. This may be offset somewhat by reduced financing and personnel ceilings.
- F. There will be an increased emphasis on fire prevention

4. Need or Opportunity for Change

No apparent need exists to change current fire management policies, goals, or objectives. Projected fuelbreak and fuel treatment acreage will meet or exceed current levels.

The probability of adequate protection is enhanced with a given level of detection, prevention, and suppression forces, provided the fuels objective can be met.

ENERGY CONSERVATION

1. Current Management Direction

The efficient use of energy is part of the criteria used for existing management practices on the TNF. The TNF does not actively solicit development of the various energy minerals or resources

2. Supply or Production Capability

Energy consumption is classed into two types, (1) direct consumption of energy by TNF administration and (2) indirect consumption by TNF users, permittees, and contractors. Direct consumption is by vehicle fuel, building utilities, and management practices. The amount of fuel used varies by vehicle type. Fuel use has stabilized in recent years as more economy vehicles are used and travel is reduced. Most administrative buildings are over twenty years old (see the FACILITIES section) and are not as energy efficient as they could be. Retrofitting buildings and other measures are currently occurring. Indirect consumption cannot be controlled by the TNF other than by transportation systems design and seasonal recreation use restrictions.

3. Existing and **Projected** Demand

The demand for energy conservation responds to national energy needs and is directly related to cost. Energy efficiency is tied to cost efficiency.

4. Need or Opportunity for Change

TNF management currently considers energy efficiency as one of the criteria for management. An opportunity exists to increase savings in energy use.

AIR QUALITY

1. Current Management Direction

The TNF manages all prescribed fire operations to prevent or minimize the penetration of smoke into urban or smoke-sensitive areas. Various forms of dust abatement are used on heavily traveled roads near residential and recreation areas.

2. Supply or Production Capability

The two TNF management activities with potential to degrade air quality are (1) smoke from prescribed fires and (2) dust from road use. Most of the Forest is located within the Mountain Counties Air Basin, with a small portion of Yuba County within the Sacramento Valley Air Basin. Within these air basins, agricultural burning regulations are implemented by the County Air Pollution Control Officer. All Forest burning projects follow these regulations and Forest Service Manual guidelines. One Clean Air Act Class I area is adjacent to the TNF, the Desolation Wilderness to the south of the TNF boundary. All areas within the Tahoe National Forest are classified as Class II, including the Granite Chief Wilderness.

3. Existing and Projected Demand

No quantifiable value is placed on air quality. The Federal Clean Air Act sets standards and guidelines for the attainment and maintenance of air quality.

4. Need or Opportunity to Change

Current management practices comply with Federal, State, and local air quality requirements.

SOCIO-ECONOMIC

1. Current Management Direction

The TNF does not directly manage social and economic resources, though these resources are affected by TNF management of the physical and biological resources. The effects of management on local communities and their economies is one criterion for management decisions.

Law enforcement is an integral part of the overall management of the Tahoe National Forest. A law enforcement program will be developed to ensure compliance with laws and regulations, protection of the public and its property, protection of Forest Service employees, and protection of Forest resources and property.

The objective is to ensure that the visitor, whenever possible, has an enjoyable experience. Therefore, prevention of criminal violations will be given first priority. Aggressive action will also be taken to discover and investigate violations of law.

2 Supply or Production Capability

The management and activities of the Tahoe National Forest influence people living both in the local area and in an extended zone of influence. Nevada, Placer, Sierra, Yuba, and Plumas Counties are directly affected by TNF activities. They are characterized by recent, rapid population growth, a relatively rural living environment, cyclical employment trends, and some dependency on the Forest for revenue and jobs. The extended zone of influence for the TNF is the San Francisco Bay Area, the Central Valley metropolitan areas, and Reno. These market areas have demographic characteristics closer to the State of California than the impact counties urban, younger, more minorities. Steady population growth is also expected to occur in the extended zone, but at rates lower than in the impact counties.

Table III 13 compares the recent population growth of these five counties and projections for the future.

TABLE 111.13 - IMPACT COUNTY POPULATION PROJECTIONS 1980-2000 *

Area	1980	1985	1990	1995	2000
California	23,063,700	24,893,900	26,661,400	28,287,700	29,702,100
Nevada County	51,000	65,100	74,300	83,000	91,300
Placer County	119,200	145,200	168,900	192,200	214,700
Plumas County	17,700	20,800	22,800	24,700	26,400
Sierra County	3,300	3,700	4,000	4,400	4,700
Yuba County	49,900	54,900	59,600	64,000	68,300
TOTAL	241,100	289,700	329,600	368,300	405,400

* SOURCES California Department of Finance, Population Research Unit, Interim Population *Projections 1980-85* Baseline E-150 (Revision), January 1980. California Department of Finance, Population Research Unit, *Projected Populations for California Counties 1975-2020* Series E-150, December 1977

A comprehensive review of the complex TNF social and economic environment is contained in two documents prepared by David M. Dornbusch and Company. The *Socio-Economic Overview for the Tahoe National Forest* and the *Socio-Economic Interrelationship Study, Central Sierra Forests and the Lake Tahoe Basin Management Unit*. These two technical documents serve as a baseline overview of the social and economic conditions which exist in the TNF's zone of influence. They present detailed information on the socioeconomic structure and the relationship of the TNF with local communities. The TNF Forest Plan and FEIS, Chapter 3, also contains sociological information.

Employment. The major employment sectors in the impact counties (Table III 14) are government, manufacturing, retail trade, and services. The retail trade and service industries include employment both from tourism and recreation and from service to the growing resident populations. Construction and manufacturing employment are also significant. The portion of retail trade and services employment that results from tourism and recreation is highly seasonal.

TABLE 1114 - 1979 EMPLOYMENT PERCENTAGES BY INDUSTRY

County	TNF Acres	Govt	Mfg	Retail	Services	Other
Nevada	169,116	21.3	13.3	22.1	22.8	20.5
Placer	241,229	21.9	7.7	22.5	20.5	27.4
Plumas	11,313	30.8	208.1	15.4	10.8	22.2
Sierra	352,222	50.0	22.2	8.3*	8.3	11.2
Yuba	20,494	46.9	9.0	14.8	9.7	19.6
STATEWIDE		17.4	20.1	16.6	20.7	25.2

* Includes wholesale

Area	1972	1975	1978	1981
California	\$10,500	\$10,900	\$12,400	\$12,700
Nevada County	8,200	8,500	9,100	8,600
Placer County	8,800	9,400	10,400	10,800
Plumas County	8,700	9,000	9,600	9,000
Sierra County	8,700	8,800	8,400	8,400
Yuba County	7,900	8,600	8,900	9,400

* Adjusted to 1982 dollars.

SOURCE U.S. Bureau of Economic Analysis, Regional Economics Information System.

County Finances. Under the National Forest Management Act, **25** percent of the revenues collected by the TNF from timber, grazing, recreation, mineral, and other resource uses of the Forest are returned to the counties in which it is located. In addition to the resource uses, there are two other categories included in the Receipt Act Payment, (1) the Knudsen-Vandenberg Fund and (2) Purchaser Road Credits. Twenty-five percent of the collections from these two categories are included in the base income for the Receipt Act payments to the counties. Each county receives a portion of these revenues based on total TNF acreage within the county. Law provides that these revenues be split evenly between public schools and roads. The State Controller's Office actually disburses the payments, commonly referred to as Receipt Act payments

The second Governmental program through which the impact counties receive revenues because of the Forest is the Payment in Lieu of Taxes Act, administered by the U.S. Bureau of Land Management (BLM). Under this Act, payment is made to counties containing Federally-owned land. Payments received under the Act may be used by the recipients for any Governmental purpose. Each of the impact counties receives payment from the BLM under this Act in proportion to the acreage of Federal lands within each impact county.

The third program is a State program, the Timber Yield Tax, which is administered by the State Controller. This tax is paid when the trees are harvested and includes the harvest on both public and private lands. The tax is then returned to the counties. Payment is made based on county property taxes. Individual counties are guaranteed an annual base payment. The timber yield tax may be considered an indirect source of revenue from the TNF. The timber is harvested on the Forest, but it is the harvester, not the TNF, who pays the tax. The tax rate is currently **2.9** percent of timber harvest value

General County Revenues. In all of the impact counties, Receipt Act payments, Payments in Lieu of Taxes, and Timber Yield Taxes contribute significantly to total county revenues. Sierra County received **\$963,059** from these three programs in FY **1979-80**. The programs' revenues accounted for over **28** percent of Sierra County's total revenues in FY **1979-80**. Since the TNF is the primary National Forest in Sierra County (in terms of acreage), it can be presumed to make a substantial contribution to both the Timber Yield Tax and In Lieu payments. Plumas County received over **9** percent of its total revenues from the three programs. Placer and Nevada Counties received over **3** percent of their total revenues from these programs in FY **1979-80**. Yuba County received the smallest portion of its total revenues, **1** percent, from these Government programs

Social Groups. For the TNF, seven social groups have been identified as likely to be affected by the management direction expressed by the alternatives. These groups generally place different demands and values on resource use. The groups were developed through a variety of sources: The Socio-Economic Overview for the Forest (see the planning records **1922.16a.7c**), Forest land use, issues raised during the scoping process, historical and projected trends of user groups, newspaper articles, government studies, use surveys, personal interviews, and census data. The identified categories are not mutually exclusive. They are, however, readily useful for analysis. Different social groups would be affected differently by various management activities. Although categorization may produce some incorrect stereotyping, generally the following Characteristics apply to these groups.

- o Long-time residents include families with traditionally rural-conservative philosophies, more closely tied to the timber, mining, and grazing uses of the TNF. Generally, this group favors commodity uses, along with recreational uses such as fishing and hunting
- o Retirees, moving from a more urban environment, generally favor more developed recreation facilities and better access and are less involved in TNF activities
- o Former urban residents are families who have moved from the urban areas to find a quieter, more rural atmosphere. They tend to use roads and recreation developments. In general, they favor amenity uses over commodity.

- o Alternate lifestyle **residents** are residents from urban areas who generally have a liberal philosophy and feel strongly about environmental protection of natural and human resources. Some are highly effective at mobilizing local and outside resources for specific local environmental issues.
- o Second-home owners permanently reside in predominantly urban areas, but live in this area part time. Many of these families live on land adjacent to or within National Forest boundaries. Their demands are for permits authorizing special uses of TNF land and for dispersed and developed recreation. Second-home owners want to retain the natural setting of the Forest. Many are relatively affluent, and family income is not closely tied to forest commodities. 'Natural' values encouraged them to purchase second homes in the area. Commodity uses, such as timber harvesting near their homes, often conflict with their interests.
- o **Regional recreationists** are mostly people who live in the Reno, San Francisco Bay, and Central Valley metropolitan areas. Regional recreationists use the high quality recreation facilities on the Forest for a wide variety of activities. These users are very interested in the amenity values of the Forest, more so than commodity production. They desire, however, facilities for both dispersed and developed recreation.
- o Native **Americans** comprise two groups, the Washoe and Maidu, who traditionally lived in and used the TNF. Today the Washoe are primarily a Nevada-based group with recognized tribal status. The Maidu are scattered throughout the foothill region and do not have recognized tribal status. The Maidu are, however, organized into local Native American cultural organizations. For the most part, traditional Native American sociocultural activities do not occur on TNF lands. Modern use of the TNF by Native Americans is generally confined to recreational activities. As with individuals from other social or ethnic groups, Native Americans employed in the timber industry are economically dependent upon TNF natural resources to varying degrees. Both Native American groups are interested in the management of cultural resources in the TNF. Forest projects which involve land disturbance have the potential to damage or destroy cultural resources related to Native American heritage.

In summary, over the past years, the social group composition has shifted from long-time residents, many with strong economic ties to the Forest, to retirees, former urban residents, alternative lifestyle residents, second-home owners, and regional recreationists. This means the demands for TNF products have shifted from commodity towards amenity uses.

Law Enforcement. The beauty and recreational opportunities of the TNF draw many visitors. Campgrounds, ski areas, reservoirs, and the general forested environment attract all types of people. These people create the need for such services as search and rescue (skiers and hikers), surface water patrol, and protection from civil disorders. The public also visits the TNF to collect fuelwood under permit and, although illegal, to attempt to cut Christmas trees. The appropriate Sheriff's Department and the California Highway Patrol are responsible, as well as TNF officers, for enforcing the 'Minor Forest Transportation Permit' for hauling fuelwood and the 'Christmas Tree Transportation Permit' for Christmas trees and greenery. The California Department of Fish and Game is responsible for enforcing the fish and game laws and suction dredging permits.

The Tahoe National Forest administers its responsibilities of regulating and protecting NFS lands. The time-tested, successful philosophy that all Forest Service employees have law enforcement responsibilities will continue and will be strengthened. The increase in volume and seriousness of law violations and the complexity and diversity of law enforcement situations occurring on the Forest today require professional law enforcement support. This support requires additional employees trained and equipped to function in a full law enforcement capacity.

The U.S. Constitution reserves to the States the authority and responsibility to protect citizens and their property. Except in specific areas, the States have delegated their general police powers to city police departments or local county sheriffs (which is the case in the TNF area), and the Forest Service does not assume the sheriffs' responsibilities in such matters. Consequently, State, local, Forest Service, and other Federal law enforcement authorities exist simultaneously on NFS lands.

The Forest currently has cooperative law enforcement agreements with Nevada, Placer, Sierra, and Yuba Counties. The services provided by the Sheriff protect recreation users and their property. These services are reimbursable under the Jurisdiction Act of 8/10/71 (Public Law 92-82) from National Forest appropriations. The TNF has good working relationships with all four county law enforcement agencies. Tahoe NF personnel also cooperate routinely with other State and Federal agencies such as the California Department of Fish and Game, California Highway Patrol, Federal Bureau of Investigation, U.S. Marshal's Office, and various drug enforcement agencies.

3. Existing and Projected Demand

The demand for the resources of the TNF is affected by the socioeconomic structure of the local area and, to a lesser extent, the regional area. Values of commodity resources are reflected in the economic structure. Values of noncommodity resources vary by social group, depending on the demand they place on these resources.

The proximity of urban areas such as Sacramento, Reno, and the Bay Area also affect law enforcement on the Forest. Local law enforcement agencies are small and have suffered budget reductions in the past four years. For example, Sierra County has only eight deputy sheriffs and is unable to handle all situations that occur within its area of responsibility on the Forest. Incidents and crimes normally associated with urban areas, such as robberies, assaults, burglaries, narcotics trafficking, and cannabis cultivation, occur on the Forest and are increasing. Increased criminal activity leads to delayed responses by responsible agencies, which in turn can expose Forest Officers and visitors to potential personal risk.

4. Need or Opportunity for Change

Need for changes in management to improve social and economic resources is discussed under each individual resource

GEOLOGY

1. Current Management Direction

Roads, structures, and timber harvest units are designed to avoid unstable slopes and high risk avalanche areas or to prevent accelerated failure wherever possible.

Earthquake hazards are managed by locating buildings, fill slopes, dams, and other facilities out of fault zones and/or using special designs to prevent failure.

Volcanic hazards are considered insignificant to TNF management. Serpentine material sources potentially containing asbestos are generally avoided.

Management of geologic resources has focused on occasional groundwater and materials source developments.

2. Supply or Production Capability

Geologic hazards (such as bedrock instability and volcanic and seismic activities) are not extensive on the TNF. The Oregon Creek drainage is an example of one drainage where land instability occurs. The extent of volcanic and seismic hazards is not well defined.

Some serpentine deposits occur, which could be a health hazard to TNF users because of asbestos content. No existing geologic Special Interest Areas are designated on the TNF; two potential areas have been inventoried. A Forestwide geologic hazard analysis and Geologic Resource Inventory (GRI) will be completed during Plan implementation.

The primary threat from earthquakes on the TNF is initiation of landslides. Possible effects include road blockage by slides, cut and fill slope failure, campsite isolation and possible burial, structural damage, rolling boulders, and human injury.

Rock and earth construction materials are used in the construction of the Forest transportation system's roads and recreational facilities. Road construction design methods call for balanced quantities (cut and fills) and some surfacing materials (native soils, rock aggregates, or paved surfaces) to protect the environment or road investment.

The Forest has prepared an inventory of potential rock quarry or acceptable borrow sites, which are evaluated for quality of material and cost effectiveness on a project basis. Historically, most aggregate needs have been filled by commercial sources within or near the Forest boundaries. Each year the Forest has constructed about 4 to 9 miles of surfaced roadways requiring nearly 1,800 tons per mile of rock materials. Sufficient sources of aggregate rock exist on the TNF or from commercial sources to meet road construction needs for many decades to come.

Potential aggregate sources are mapped and located in the planning records, specifically 1922 16a.7c.

3. Existing and Projected Demand

In the past, timber harvesting and road building on the TNF have avoided much of the steepest and most unstable ground. Increasing demand for timber and minerals requires access to the more remote, steeper, and often more unstable ground. Consequently, the need for land stability analysis will accelerate. Demand for rock and soil materials may increase in order to supply watershed restoration projects and meet road surfacing needs. Demand for more recreation opportunities will likely promote increased interest in geologic Special Interest Areas and groundwater wells to supply campgrounds and other facilities.

4. Need or Opportunity for Change

Future management needs include completion and field verification of the instability mapping, improved correlation of geologic units to soils and vegetative types, and analysis of causes of landslides and their relationship to geologic units and management activities. Potential asbestos hazards need to be defined. Much of this will be accomplished by completing the GRI. More emphasis is needed on including geologic hazard and resource information in project planning and implementation. The majority of the unstable areas on the TNF are small enough so that they can be managed.

EVALUATION OF POTENTIAL OUTPUT LEVELS OF SELECTED RESOURCES

The **TNF's** capability to produce or supply goods and services is a measure of natural resource productivity, the application of management practices, and land availability and suitability limitations for that resource. Resource capability is measured as outputs of goods and services.

To facilitate the formulation of alternatives, a range of resource capability output levels was developed for the following eight resources and resource activities (1) developed recreation, (2) dispersed recreation, (3) downhill ski recreation, (4) wilderness, (5) range, (6) timber, (7) wildlife habitat improvement, and (8) water yield meeting water quality standards. Five levels of outputs were calculated for each of these resources or resource activities to represent the range of potential output levels: maximum, current, 1980 RPA Program, minimum, and Forest Plan (the preferred alternative). These levels are defined in the following sections. Tables 111:16 through 111:22 present the calculated outputs in each decade of the planning period for each output level of the eight identified resources or resource activities.

- o The maximum output **level** maximizes production of a single resource. This level of output is not constrained by the simultaneous production of other resources. This level of output for a particular resource, while achievable, is not feasible as it does not provide an acceptable integration of goods and services. The level of output must protect soil and water and meet other minimum legal requirements as defined in the minimum level.
- o The current **levels** portray future output levels that would be produced should the current management direction be continued.
- o The 1980 RPA program **level** represents the level of output that has been assigned to the TNF by the PSW Region as necessary to help meet the National RPA targets. Levels of output are based upon TNF landbase capability, which are stated in the Pacific Southwest Regional Guide.
- o The **minimum level** represents the lowest level of output that would result in the event of a prolonged low or minimum level of financing and from a low level of management **intensity** and administration. It was assumed that there would be no capital improvements such as road construction, range, wildlife habitat improvements, or watershed restoration projects.
- o The preferred **level** projects outputs directed by the proposed Forest Plan.

This completes the summary of the Analysis of the Management Situation. For a further, detailed discussion refer to the *TNF Analysis* of the Management Situation, October 1988. This document can be reviewed at each Ranger District office, the TNF Supervisor's Office, and the PSW Regional Office.

TABLE 111.16 - POTENTIAL AVERAGE ANNUAL OUTPUT LEVELS OF DEVELOPED RECREATION (IN THOUSAND RECREATION VISITOR DAYS)

DECADE	1	2	3	4	5
MAXIMUM 1/ CURRENT	1,976	2,393	2,784	3,129	3,312
RPA	1,976	2,185	2,185	2,185	2,185
MINIMUM	1,930	2,060	2,200	2,530	2,800
PREFERRED	0	0	0	0	0
	1,976	2,393	2,784	3,129	3,318

1/ A maximum level of recreation was determined using projected demand.

TABLE 111.17 - POTENTIAL AVERAGE ANNUAL OUTPUT LEVELS OF DISPERSED RECREATION (IN THOUSAND RECREATION VISITOR DAYS)

DECADE	1	2	3	4	5
MAXIMUM	2,925	3,436	3,944	4,452	4,960
CURRENT	2,925	3,436	3,944	4,452	4,960
RPA	2,610	2,770	2,900	3,130	3,250
MINIMUM	2,000	2,000	2,000	2,000	2,000
PREFERRED	2,925	3,436	3,944	4,452	4,960

TABLE 111.18 - POTENTIAL AVERAGE ANNUAL OUTPUT LEVELS OF DOWNHILL SKIING RECREATION (IN THOUSAND RECREATION VISITOR DAYS)

DECADE	1	1	1	2	1	3	1	4	1	5	1
MAXIMUM 1/ CURRENT	292			379		492		639		830	
RPA 2/	292			379		492		639		830	
MINIMUM	NA			NA		NA		NA		NA	
PREFERRED	0			0		0		0		0	
	292			379		492		639		830	

2/

TABLE 111.19 • POTENTIAL AVERAGE ANNUAL OUTPUT LEVELS OF RANGE PRODUCTION (IN THOUSAND ANIMAL UNIT MONTHS)

DECADE	1	2	3	4	5
MAXIMUM	54.9	55.1	58.9	60.7	56.9
CURRENT	22.4	22.9	22.1	20.5	20.0
RPA 1/	34.2	34.1	33.9	31.8	30.4
MINIMUM	0	0	0	0	0
PREFERRED	20.8	20.9	21.6	22.3	23.0

1/ As amended by Regional Forester, letter of June 1982 to Forest Supervisors.

TABLE 111.20 • POTENTIAL AVERAGE ANNUAL OUTPUT LEVELS IN THE TIMBER SALE PROGRAM (IN MILLION BOARD FEET)

DECADE	1	2	3	4	5
MAXIMUM	351.0	291.3	241.8	200.7	
CURRENT	173.4	193.7	193.7	193.7	
RPA	173.0	186.0	198.4	198.4	198.4
MINIMUM	0	0	0	0	
PREFERRED	142.3	142.3	142.3	142.3	142.3

TABLE 111.21 • POTENTIAL AVERAGE ANNUAL OUTPUT LEVELS OF FISH AND WILDLIFE HABITAT IMPROVEMENT (IN THOUSAND ACRES)

DECADE	1	2	3	4	5
MAXIMUM	5.0	5.0	5.0	5.0	5.0
CURRENT	1.0	1.0	1.0	1.0	1.0
RPA	3.3	3.3	3.3	3.3	3.3
MINIMUM	0	0	0	0	0
PREFERRED	1.0	1.0	1.0	1.0	1.0

TABLE 111.22 • POTENTIAL AVERAGE ANNUAL OUTPUT LEVELS OF WATER YIELD MEETING WATER QUALITY STANDARDS (IN THOUSAND ACRE-Feet)

DECADE	1	2	3	4	5
MAXIMUM	2,100	2,090	2,090	2,100	2,040
CURRENT	2,050	2,060	2,080	2,070	2,070
RPA	2,080	2,060	2,090	2,060	2,070
MINIMUM	1,970	1,960	1,950	1,940	1,940
PREFERRED	2,080	2,080	2,080	2,080	2,090



Early day guard station, 1912

CHAPTER IV

PUBLIC ISSUES, CONCERNS, AND OPPORTUNITIES SUMMARY

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IV. PUBLIC ISSUES, CONCERNS, AND OPPORTUNITIES SUMMARY

Regulations implementing the National Forest Management Act (NFMA) require the identification of current public issues, management concerns, and resource use and development opportunities (issues, concerns, and opportunities). A public issue is a subject or question of widespread public interest identified through public participation relating to management of NFS lands. A management concern is a problem requiring resolution or a condition constraining management practices identified by the Interdisciplinary and Management Teams. An opportunity is a combination of circumstances favorable for the purpose. The issues, concerns, and opportunities provide the basis for the Forest planning process. Consequently, the planning process is responsive to changing conditions.

Comments were solicited from the public to help identify the public issues. The Pacific Southwest Regional Forester notified the public and other agencies in September 1979 of intentions to produce a Land and Resource Management Plan for the Tahoe National Forest (TNF). In November 1979, and again in November 1983, the TNF Forest Supervisor published notices in local newspapers and in the Tahoe Planner newsletter that scoping meetings would be held to accept public comment. Seven scoping meetings were held during 1979, and one in 1983, in the TNF's area of interest to explain the planning process and request public input. (Refer to TNF planning records. These records are incorporated by reference and are available for public review at the TNF Supervisor's Office)

In 1979, the TNF Interdisciplinary and Management Teams identified the following 9 issues, concerns, and opportunities (ICO's) to be addressed in the Forest Plan: (1) ownership patterns and land uses, (2) minerals, (3) energy; (4) inventoried roadless areas (revised 4/1/83 and previously called Further Planning Areas); (5) facilities, (6) forage, wood, and soils; (7) water; (8) recreation; (9) fish and wildlife habitat. These issues, concerns, and opportunities are described in the following pages. Following the issues, is a discussion of how each is resolved by the Forest Plan.

In addition to the 9 major issues identified by the TNF Teams, the Pacific Southwest Regional Guide deferred 11 Regional issues, concerns, and opportunities to be answered during the Forest planning process. These **Issues** were addressed in at least one alternative in the DEIS, where applicable on the TNF.

Not all public issues and management concerns related to the TNF are appropriate for inclusion in this planning process. Those that have been selected for consideration address concerns that can be resolved at the Forest level, require land allocation decisions or broad management direction, have long term importance, and have not been resolved in other recent decisions that were made with significant public involvement.

Each selected issue or concern is representative of public comment, legislation or litigation decisions, management evaluation of resource conflicts, or supply and demand analyses. In most cases, both the public and management have expressed interest in each general resource area. Specific comments and responses are described in Appendix A of the Final Environmental Impact Statement.

Following release of the DEIS and draft Forest Plan and a five month comment period, a list of 12 major issues was developed. This list was the result of analysis of the comments contained in about 12,000 letters of input and oral testimony from three formal public hearings on the DEIS and draft Forest Plan. Some of these 12 issues are the same as those contained in the initial issue list. Others are a variation of those initial issues, and others are new. All the ICO's are addressed or resolved by: (1) qualitative analysis using a mathematical model, (2) TNF Forestwide management standards and guidelines (S&G's) or (3) prescriptions establishing specific compatible management practices for management areas. Specific references are made to Forestwide S&G's, Practices, and management area numbers. (The S&G's and Practices are listed in Chapter V in the gold and yellow pages, respectively.)

OWNERSHIP PATTERNS AND LAND USES

ISSUE

IN WHAT WAYS AND TO WHAT EXTENT CAN THE FOREST SERVICE LESSEN OR RESOLVE CONFLICTS IN USE BETWEEN NATIONAL FOREST, PRIVATE, AND OTHER PUBLIC OWNERSHIPS WITHIN THE TNF BOUNDARY? SOME OF THESE CONFLICTS RESULT FROM THE CONFLICTING DESIRES AND NEEDS OF DIFFERENT OWNERS AND THE PUBLIC IN THEIR RESOURCE MANAGEMENT OBJECTIVES.

What land ownership adjustments should be made for community development and for improving land and resource management?

Resolution - Specific land ownership adjustment direction is provided in the specific management area direction.

What should be the Forest Service direction within the TNF toward fire protection (structural and wildland) on intermingled private lands?

Resolution - Appropriate direction for fire protection on private lands are provided by Regional and National policies, Forestwide S&G's, and specific management area prescriptions. Although structural fire protection is the ultimate responsibility of the homeowner, protection is usually provided in a variety of ways including volunteer groups, local fire departments, and by contracting with the California State Department of Forestry and Fire Protection (CDF) for structure protection. CDF has legal responsibility for wildland protection on the majority of private rural lands within the state and fire protection is provided on privately owned wildlands by CDF or through contracts with either the Forest Service or Bureau of Land Management. The TNF has sole responsibility for protection of National Forest System lands.

How much of the non-Federally owned lands within the TNF boundary should be added to the National Forest System?

Resolution - Adding lands is a function of available financing and National priorities. Appropriate direction for land adjustment is provided for each management area.

When, where, and how should the Forest Service allow support services (sanitary landfills, green belts, roads, parking lots, etc.) required for adjacent private developments to be placed on National Forest System lands?

Resolution - Allow uses on National Forest System land only when such uses cannot be placed on private land and do not conflict with National Forest management objectives for the area. Forestwide S&G's address road access to private lands.

What new areas should be allocated to utility rights-of-way, electronic transmission sites, and other public utilities?

Resolution - Energy transmission corridors for the TNF have been designated to accomplish known needs. Specifically, the 1-80 corridor is designated as a utility corridor. The prescription for this corridor designates utilities as the dominant resource emphasis. Existing or proposed Special Interest Areas, Research Natural Areas, Wild Rivers, and Wilderness are exclusion areas, i.e., preclude utility and transportation corridors and electronic sites. These types of uses should be avoided in other areas such as developed recreation sites and along scenic highways. Proposals in these and other areas will be evaluated on a project basis to determine specific impacts on other resources and to suggest mitigation measures.

MINERALS

ISSUE

WHAT FOREST SERVICE EMPHASIS SHOULD BE PLACED ON THE SURFACE MANAGEMENT OF MINERALIZED AREAS WITHIN THE TNF? THIS INCLUDES BOTH LOCATABLE AND LEASABLE MINERAL RESOURCES.

Where conflicts between mineral operations and other resource programs occur, how can they best be mitigated?

Resolution- Certain areas, such as Research Natural Areas and scenic corridors, are being proposed for withdrawal from mineral entry. Mineral withdrawals will be kept to the minimum necessary to protect key areas. The majority of the TNF will remain open to mineral entry in accordance with Forestwide standards and guidelines. Mineral entry and mineral leasing will be conducted in accordance to S&G's through plans of operations.

What should be the TNF direction for the development of common variety materials (sand, gravel, etc.)?

Resolution - The Plan provides for long-range development of rock sources where they will not interfere with other resource uses.

What should be the TNF policy for suction dredging in the river system open to mineral entry?

Resolution - Appropriate withdrawals will be proposed in management areas along scenic Highways 20, 49, and 89, including adjacent areas of concentrated recreation use. The remaining areas will remain open and will be managed in accordance with the mining regulations and State law.

How should occupancy trespass be resolved?

Resolution - If unauthorized occupancy cannot be resolved through negotiation, appropriate legal action may have to be recommended.

ENERGY

ISSUE

HOW SHOULD MANAGEMENT OF THE TNF CONTRIBUTE TO CONSERVING ENERGY AND MEETING FUTURE ENERGY NEEDS?

To what extent can the TNF land and resource management direction improve the energy efficiency of existing and planned facilities, including transportation and communication systems and buildings?

Resolution - Forestwide S&G's will guide energy efficiency in developing facilities associated with resource activities such as roads and buildings. Programs such as retrofitting buildings and road closures will be implemented that reduce energy consumption.

Where, and to what extent, should energy resources such as fuelwood, hydropower, wind energy, and fissionable and geothermal energy be developed? For example, the use of geothermal energy sources is an important component. Although the leasing of land for development of geothermal energy sources is within the jurisdiction of the U.S. Bureau of Land Management, the Forest Service establishes special land-use stipulations to minimize the conflicts and to reduce the potential adverse effects, immediate and cumulative, from development of this resource.

Resolution - Fuelwood capability is identified in the Forest Plan. The amount of fuelwood actually available for consumption is based on a trade-off between other demands for wood fiber. Hydroelectric developments and geothermal leases are proposed by entities other than the Forest Service. Appropriate remedies and mitigation measures will be recommended when conflicts with other resources are identified. Direction is implemented through Forestwide S&G's

What are the **most** energy efficient modes of transportation, such as mass transit for recreationists, off-highway routes for larger log-haul trucks, etc.? Where and how can the Forest Service encourage the use of these transportation systems?

Resolution - TNF roads are all linked to State and county roads, making off-highway haul infeasible. Analysis of commodity transportation and recreation development will be coordinated with mass transit opportunities in the Interstate 80 corridor, which are currently under study by the California Department of Transportation.

What logging systems should be prescribed to harvest National Forest resources to balance energy conservation with other resource considerations?

Resolution - Forestwide S&G's direct energy considerations in the planning of timber harvest systems and post-harvest activities. Energy consumed with the various harvest systems is discussed in the EIS. Logging systems may improve through research, but economics will govern adoption of new methods

INVENTORIED ROADLESS AREAS (Name changed from Further Planning Areas, Revised (6/28/88))

ISSUE

HOW SHOULD ALL INVENTORIED ROADLESS AREAS BE MANAGED ON THE TNF?

What are the economic, social, and political consequences resulting from management of roadless areas on the TNF?

Resolution - This resolution applies to all components and indicators in the Inventoried Roadless Area issue. The California Wilderness Act was signed by the President on September 28, 1984. Under this Act, about 18,705 acres of National Forest System land in the Granite Chief roadless area were designated as wilderness. All other areas were designated for a combination of uses other than wilderness. The Plan provides management direction for all the roadless areas (See Appendix G in FEIS.)

FACILITIES

ISSUE

HOW CAN THE TNF MANAGEMENT, OPERATION, AND DEVELOPMENT OF ITS FACILITIES (ROADS, TRAILS, ADMINISTRATIVE FACILITIES) BE OPTIMIZED WITH RESPECT TO USER INTERESTS, RESOURCE MANAGEMENT AND HUMAN RESOURCE NEEDS, PRIVATE LANDOWNER CONCERNS, AND ECONOMIC EFFICIENCY?

What road and trail systems are needed to access lands for National Forest resource management and public use? What policy should direct use of National Forest System lands for other ownership access, development, and protection needs?

Resolution- Direction for local road development is included in the Forestwide S&G's and Practices. Specific road issues for arterial/collector systems and trails are included in management area prescriptions. Specific development is displayed in the Transportation Development Element Map included in the Forest Plan. Supporting quantitative analysis is included in the TNF planning records.

How should the TNF Plan, manage, and operate its transportation system to integrate it effectively with private land access needs and with the 26 percent of the TNF's transportation system under State or county jurisdiction?

Resolution- Forestwide S&G's cover subdivision access policy for existing roads. Forest goal 1 described under FACILITIES in Chapter V address new road development on NFS lands built for private development.

In what areas do resource protection or user safety require control of recreation vehicles (both on- and off-highway) or other traffic? What restrictions are necessary to accomplish this?

Resolution- Forestwide S&G's and Practices direct management area prescriptions to mitigate the transportation concerns. The Forest Plan includes an element map describing transportation regulations for roads, trails, and off-highway uses.

What TNF administrative facilities are necessary to best meet the needs of future resource programs?

Resolution- The Forest Plan identifies three geographic areas where further analysis for development of administrative facilities is required. These areas are included in the appropriate management area for further analysis. The TNF will continue to request funding to fully maintain existing facilities or to replace facilities not worth maintaining.

FORAGE, WOOD, AND SOILS

ISSUE

HOW MUCH AREA OF THE TNF SHOULD BE MANAGED FOR RENEWABLE COMMODITY OUTPUTS (FORAGE AND WOOD)? HOW INTENSIVELY SHOULD VEGETATION BE MANAGED TO OPTIMIZE COMMODITY OUTPUTS? WHAT FOREST SERVICE EMPHASIS SHOULD BE PLACED ON THE SOIL RESOURCE TO MAINTAIN OR ENHANCE PRODUCTIVITY?

How much wood should be harvested and where should this production be emphasized?

Resolution- There are 629,018 acres of capable and available forest land suitable for timber production. Timber production will be emphasized on 528,478 acres established for even-age timber management. The corresponding allowable sale quantity of timber is 142.3 MMBF per year. The amount of programmed sale quantity will depend on markets, availability of funding, and the purchasers' ability to harvest the separate components of the allowable sale quantity.

What should be the amount, methods, and location of timber harvest and other silvicultural systems?

Resolution - In streamside zones and riparian areas, on sensitive watershed lands, and along scenic highways, etc., about 159,001 acres are allocated to special cutting practices, and 9,329 acres to group selection. Intensive even-age management emphasis will be applied to about 233,201 acres. Less intensive even-age management practices will be applied to the remaining acres, or about 126,944 acres.

How should the forage production potential be allocated among competing uses?

Resolution - Forestwide S&G's provide basic protection of competing uses. Quantitative analysis through FORPIAN was used to determine the optimum allocation among competing uses.

What should be the level of use and development of National Forest System ranges on the TNF?

Resolution - There are 50,789 acres of capable land suitable for forage production. Intensive range management practices will be emphasized on about 75 percent of those lands by the end of the fifth decade. Livestock production achieved will be 23,000 AUMs by using both the permanent and transitory range opportunities.

Losses of grazing land to urban development and other uses

Resolution - Development of private lands used for grazing in coordination with adjacent TNF lands also reduces TNF grazing because the TNF lands on their own cannot support a viable grazing operation. Loss to urban development can be dealt with partially through land exchange policy. The trade-offs among competing uses are clearly shown by comparing differences in forage production between the several alternatives (see Chapter 2 of the EIS). Management area direction provides for appropriate range emphasis through assignment of range practices.

Public scrutiny of current management practices.

Resolution - Concern over herbicides and other intensive management practices will likely continue. The Integrated Pest Management approach considers a full range of pest management alternatives including mechanical, biological, chemical, and cultural methods, on a case-by-case basis. The selection of any particular treatment method will be made at the project level and based on a site-specific analysis of the relative effectiveness, environmental effects, and costs of the feasible alternatives. These factors were considered in the development of Forestwide S&G's and management prescriptions. A separate Region-wide Vegetative EIS and Plan provide the direction for herbicide use. All herbicide use on the TNF will be in accordance with this direction.

The reforestation and timber stand improvement backlogs are a political issue

Resolution - Current progress on the backlogs should resolve the problem of attaining TNF targets. This backlog was completed in 1985. Remaining acres needing reforestation are being completed on a planned basis.

Employment and stability in local communities dependent on, or affected by, the TNF timber supply.

Resolution - The amount of uncut timber volume under contract on the TNF (end of fiscal year 1988) is about 400 MMBF, about 2.8 times the programmed allowable sale quantity of 142.3 MMBF scheduled in this Plan. The allowable sale quantity of 142.3 MMBF will maintain community stability. This allowable sale quantity will be offered for sale annually, assuming funding is available.

Direction that consideration be provided to timber harvest schedules which depart from the current policy of even-flow, nondeclining yield.

Resolution - None of the conditions or multiple use management objectives necessary for departure established in 36 CFR 219.16 are present on the TNF. Departure was analyzed in one alternative. With an allowable sale quantity of 142.3 MMBF/year, no need exists for a departure from even-flow, nondeclining yield in the Forest Plan.

The demand for wood fiber for home heating as an alternative or supplemental energy source.

Resolution - The TNF will offer fuelwood to the extent it is compatible with timber management programs such as site preparation, timber sales, precommercial thinning, and other vegetative management. These fuelwood areas will be within two hours driving distance for most users.

What should the Forest Service policy be to maintain or enhance soil productivity?

Resolution - Forest Service policy follows legal direction to maintain or enhance soil productivity and use. This policy is partially addressed in the Forestwide standards and guidelines, including Best Management Practices (BMP's). Some standards, such as soil-loss tolerance limits, remain to be developed.

Forest management activities are being intensified without the full knowledge of the soil's potential for long-term production.

Resolution - Forestwide standards and guidelines, including BMP's, will be used as state-of-the-art methods to maintain long-term productivity. The effectiveness of these practices will be monitored to determine the effects on long-term productivity. Coordination with the PSW Region to estimate these effects will continue.

Some old logging and mining areas have large areas of disturbed soils

Resolution - Opportunities for soil resource and water quality improvement projects have been identified in the Analysis of the Management Situation, the EIS, and in the management area descriptions of the Forest Plan.

Forest regeneration has not been successful on some soils.

Resolution - Reforestation success was one of the major considerations in determination of physical suitability. The conclusion of the suitability analysis was that all capable land can be reforested within 5 years of final harvest. Also, the Forest monitoring plan requires evaluation of reforestation programs. When evaluation and monitoring indicate regeneration failure because of soil factors, lands with similar soils will be removed from the land base identified as suitable for timber production.

Some commercial forest land should be classified as noncommercial or marginal for timber production

Resolution - Land suitability for timber production will be monitored and evaluated during the planning period. Most of the lowest productive forest land (strata E3S) was allocated to a dual range-timber emphasis, and is a separate part of the allowable sale quantity for timber.

How should the TNF manage woodlands not presently managed for sawtimber (e.g., oak woodlands, pinyon-juniper, low-ste confers)?

Resolution - Before the decision is made to manage lands not managed for sawtimber for other uses, there is a need to identify the opportunities, costs, and benefits of managing woodlands for forage, water, recreation, and wildlife.

WATER

ISSUE:

HOW SHOULD THE MANAGEMENT OF TNF RESOURCES RESPOND TO THE DEMANDS AND ALLOCATIONS FOR WATER QUALITY, QUANTITY, STORAGE, AND TRANSMISSION?

What should be the management emphasis to increase available runoff or to alter timing of flow?

Resolution - Because of other resource constraints, water yield increases and changes in timing are incidental to other uses. Increases are a response to other activities, especially timber harvest. Water yield increases and changes in timing are borne out in the FORPLAN analysis for water yield, which showed little potential to increase water yield even in the high-water-yield benchmark.

Forest practices allow for some permanent increase in water yield, primarily on low productivity range sites on the east side of the TNF. The changes in water yield resulting from different resource emphases are documented in the planning records

What are the water requirements for on-Forest use for management of resources? What quality standards should be established to meet these requirements?

Resolution - Total on-Forest needs are very insignificant compared to total water production from Forest lands. Water quality standards have already been established by the Lahontan and Central Valley Regional Water Quality Control Boards

To what extent can the TNF respond to increasing off-Forest needs for water, including timing of flows and water quality?

Resolution - FORPLAN analysis, through water yield coefficients, shows the changes in water yield with different resource emphasis. The potential for increase is minor and the differences among alternatives are insignificant and would not begin to meet ultimate downstream needs. Water quality is discussed in the above resolution.

How should existing and future water storage projects be used for recreational and fishery purposes?

Resolution - This issue has been partially resolved by designating management areas associated with large reservoirs and numerous small lakes. Recreation use and the need for fisheries improvement are identified for these management areas. Existing and future storage projects have been identified in appropriate management areas. Specific prescriptions that recognize recreational and fishery uses have been developed for these areas. In certain specific cases, TNF needs associated with existing water storage projects are subordinate to or in conflict with the operation of these facilities because of prior superior rights or higher downstream needs. Where possible, agreements were made with the water storage facility operator, the TNF, and the California Department of Fish and Game to protect the associated recreation and fisheries opportunities. Similar agreements will be pursued for future projects.

What is the role of the TNF in providing land for future impoundments?

Resolution - Future impoundments are evaluated on a case-by-case basis. Specific lands allocated to impoundments are identified in specific authorization bills. The TNF's role is primarily advisory in the selection of such lands and in offering and incorporating mitigation measures where possible to protect fish, wildlife, recreation, and water quality.

What is the TNF's role in providing off-stream storage to meet peak power demands through hydroelectric generation?

Resolution - Such project proposals are evaluated on a case-by-case basis. Mitigation measures and specific constraints, such as channel maintenance flow requirements, are normally incorporated into these projects to reduce and minimize impacts to other TNF uses

How does the TNF assess the instream flow needs with other beneficial uses?

Resolution - Instream flow needs are not resolved in the Forest Plan. They will be assessed at the project level as needed. Instream flow need determinations are often coordinated with the California Department of Fish and Game, such as in the case of small hydroelectric proposals

What is the fair share of change in water quality to be allocated to on-site National Forest uses versus off-site uses?

Resolution - The Best Management Practices (BMPs) developed in response to Section 208 of the Federal Clean Water Act are designed to keep on-site changes within practical and feasible limits. Ongoing monitoring will measure the effectiveness of BMP's in accomplishing these objectives

There is no allocation of water quality degradation to users. Instead, all users must meet standards developed by the Regional Water Quality Control Boards

To what extent should overall watershed integrity and water quality (cumulative watershed effects) be influenced by TNF activities?

Resolution - Forestwide S&G's address the resolution of this concern. Cumulative watershed effect analysis procedures are being refined and are used on a ~~case-by-case~~ basis for small watersheds.

RECREATION

ISSUE:

TO WHAT EXTENT SHOULD TNF LANDS BE MANAGED FOR RECREATION AND SCENIC PURPOSES?
WHAT SHOULD BE THE MIX OF RECREATION USES ON TNF LAND?

What is the demand for developed winter sport sites, and how can and where shall the TNF meet the Regionally allocated share?

Resolution - Sufficient land with winter sports potential is allocated in the Forest Plan to meet projected future demand. The availability of support services (e.g., transportation) and market conditions will determine whether additional facilities are constructed.

What is the desired mix of recreational activities on the TNF?

Resolution - This plan provides sufficient opportunities and recreational settings, through land allocations and motorized use restrictions and designations, to separate conflicting summer and winter recreation uses and to meet user demand for areas and facilities.

Increased demand for other commodities in backcountry areas could depreciate the backcountry experience or the perceived undeveloped environment.

Resolution - The Plan provides specific management direction in certain management areas to protect backcountry values through semi-primitive nonmotorized (SPNM), semi-primitive motorized (SPM), and Wilderness standards and guidelines. Other backcountry areas will be available for commodity development, particularly timber management.

Conflicts between off-highway vehicle use, nonmotorized recreation access, and hunting and fishing use

Resolution - Each management area provides direction specifying the extent to which motorized activities are permitted. The Plan allocates 142,103 acres as open to OHV use, 78,823 acres as seasonally restricted to OHV use, and 44,939 acres as closed to OHV use. The OHV use designations for specific areas of the Forest are based upon resource protection needs and minimizing user conflicts. Through monitoring, future conflicts will be identified and resolved.

There are existing and potential conflicts with adjacent private land.

Resolution - Conflicts are likely to continue as long as the present alternate ownership pattern exists. Management areas with known problems contain direction to minimize conflicts through OHV restrictions and similar measures. Future conflicts will be resolved at the project level.

Nordic skiing and snowmobiling conflicts on the same areas

Resolution-Through specific land allocations, areas for cross-country skiing are designated. Conflicts with motorized uses are eliminated or reduced by restricting OHV use or by providing OHV trails in individual management areas

Crowding of existing parking areas for dispersed use occurs during winter

Resolution- This Plan identifies the potential and need for winter recreation parking in specific management areas. One new facility has been constructed using State Off-Highway Vehicle funds. New parking facilities will be provided using funds from the State Snow Park program on a case-by-case basis.

There is a high demand for alpine skiing. Existing developed sites are becoming overcrowded on weekends and holidays

Resolution - Possible new alpine skiing sites are identified in the Analysis of the Management Situation and the EIS. Four management areas are allocated to winter recreation use. New sites and expansion of existing sites will be evaluated and developed on a project basis.

Continuing interest in interconnecting ski developments in the Sierra Crest area

Resolution- The management emphasis and prescriptions for management areas along the Crest provide an opportunity to make this interconnection.

Increased popularity of Nordic skiing is resulting in a demand for base facilities. Should these facilities be located on private or public lands?

Resolution - Areas where support facilities are needed are identified in individual management areas. Location of support facilities on private land will depend upon the interest of the private landowners to provide such facilities. One new facility has been developed with base facilities on private land

What priority should be given to managing the scenic values of the TNF?

Resolution - Management area direction establishes visual quality objectives (VQO's) for all TNF land. Generally, these VQO's give priority to maintaining a natural or near-natural-appearing environment in the foregrounds of heavily used recreation areas and travel corridors. The middleground of the highways included as eligible in the State Scenic Highway Master Plan will also be maintained as predominantly natural in appearance. Maintaining a natural appearance will be a high priority in SPM and SPNM dispersed recreation areas. In the remaining areas where recreation use and visual concerns are less, the priority for management will be for other resource activities such as timber management

Application of VQOs, according to current visual resource management direction, to land adjacent to or visible from Forest development roads can, in turn, restrict use of the resources for which the roads were built.

Resolution - VQOs are established in the Forest Plan in the management area prescriptions and by the Forestwide S&G's. The only TNF roads assigned retention or partial retention VQOs are those with very high volumes of recreation traffic. In these cases maintaining scenic quality will be of higher or equal priority to other resources, including timber harvesting. The vast majority of TNF roads are assigned modification VQOs, which would minimally restrict timber harvesting.

What should be the TNF management direction along scenic highways?

Resolution- Visual resource direction is specified for each management area. Specific management plans will be developed for scenic highways to provide for timber management in areas of highest

productivity while ~~at~~ the same time protecting the visual resource. Appropriate withdrawals will be proposed for those segments not already withdrawn. The minimum VQO assigned to the foregrounds or middlegrounds of the State scenic highways is partial retention. The foregrounds are assigned the retention VQO to maintain natural landscapes except where electronic sites or utility corridors make retention unfeasible. Thus, TNF management will maintain the natural scenic quality of the State scenic highway corridors, but timber will be managed and regulated in a manner compatible with the assigned VQOs.

Energy shortages may cause some shift in recreation use; the trend is inconclusive to date.

Resolution- The TNF may experience a more rapid increase in recreation use than currently projected if critical energy shortages develop, because the TNF is close to metropolitan areas. Evaluation and monitoring will identify rapid increases in recreation use.

How should the conflicts between visual resource management objectives and other resource objectives be resolved?

Resolution - Management area direction identifies VQOs for every acre of TNF land. Where high recreation use in developed sites, at reservoirs, along major travel corridors, or in major dispersed recreation areas creates a high priority for maintaining scenic quality, visual resource management will generally be given priority or equal weight with the conflicting resource objective. The visual resource emphasis usually extends to the foreground of the sensitive routes or areas. Throughout most of the remainder of the Forest, timber management will be a higher priority than maintaining a natural-appearing environment for dispersed recreationists or for the middlegrounds or backgrounds of distant roads

There is a public demand for vistas of natural-appearing forest landscapes.

Resolution- Management area direction identifies VQO's for every acre of TNF land. In the foreground and middleground of many of the more sensitive viewpoints of the TNF (principally along the four highways in the State Scenic Highway Master Plan), the VQOs will generally be retention and partial retention. While these views will remain predominantly natural, most will reveal some degree of landscape alteration. Views into a few SPNM and Wilderness recreation areas--Granite Chief, Grouse Lakes, and Loch Leven--would remain largely natural panoramas. Most remaining TNF vistas outside these areas will be dominated by landscape alterations caused by forest management. Where scenic highway views extend beyond the middleground (as they do at the Alpha-Omega overlook), those background portions of the views will also be dominated by human-caused modifications.

What areas now allocated to summer homes should be retained or be reallocated to different uses?

Resolution - A future-use determination was conducted on each of these tracts. No conflicts were identified; tract use will continue for at least 20 years more.

There are conflicting interests for additional Wild and Scenic River designation on some rivers. How should the TNF study and recommend rivers for additions to the National Wild and Scenic River System?

Resolution - Portions of three rivers were identified in the Heritage Conservation Resource Service inventory for Wild and Scenic River designation, but none were considered suitable. The North Fork American River is already classified and managed as a Wild River. The North Fork of the Middle Fork of the American River, the North Fork of the American River, and Canyon Creek do not meet the eligibility criteria for classification under the Wild and Scenic River Act. The Truckee River will be studied for eligibility within the next three years in cooperation with the Lake Tahoe Basin Management Unit.

Cultural resource protection is mandated by law. Forest Service management must meet these legal requirements.

Resolution - This protection will be met by implementing Forestwide standards and guidelines. Forestwide S&G's in this Plan will ensure that cultural resource requirements are met. Individual management areas identify specific protection problems or cultural resource management opportunities

FISH AND WILDLIFE HABITAT

ISSUE:

WHAT FOREST SERVICE EMPHASIS SHOULD BE PLACED ON WILDLIFE HABITAT TO MAINTAIN OR ENHANCE PRODUCTIVITY, QUALITY, AND DIVERSITY?

How will the Forest maintain viable populations of vertebrates and provide satisfactory habitat diversity over time?

How will viable populations be maintained over time?

Resolution - Since development of management programs for all species is impractical, this Plan identifies 33 species and 7 species groups as the focus of management (see Appendix D). The species were chosen in cooperation with the U.S. Fish and Wildlife Service (FWS) and the California Department of Fish and Game (CDF&G) and are believed to be the most deserving of management attention at this time. Species chosen are those with special status (threatened, endangered, sensitive, harvest) or animals of particular interest to the public. The groups of species selected are associated with critical habitats that could change with future management (riparian, meadows, hardwoods, old-growth forests, and wetlands). A program for habitat management will be developed for each species and group in cooperation with the FWS and CDF&G. These programs and the Forest standards and guidelines insure that viable populations of all native vertebrates are maintained over time.

How will habitat diversity be provided?

Resolution - In this Plan, riparian areas, meadows, old-growth forests, wetlands, and hardwoods have been identified as critical fish and wildlife habitats. Standards, guidelines, and practices have also been prepared to protect natural resource values associated with snags, down logs and critical habitats. In addition, special management prescriptions will be developed to protect the amenity values in critical habitats (see Appendix D).



Sierra Buttes lookout, 1915

CHAPTER V

MANAGEMENT DIRECTION

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V. MANAGEMENT DIRECTION

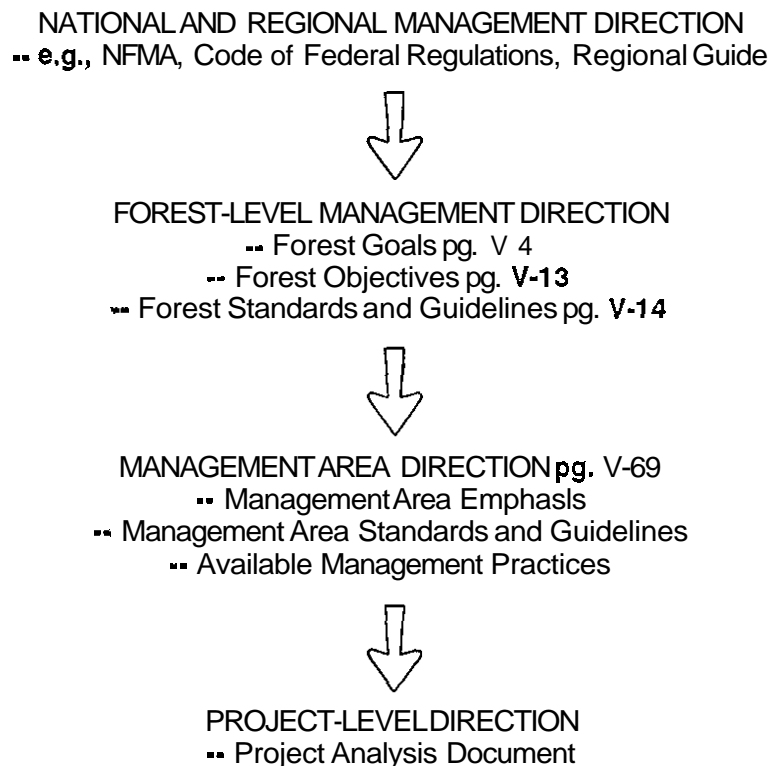
INTRODUCTION

This chapter provides direction for managers of the Tahoe National Forest. It sets the standards for management actions, provides rationale, and predicts how the Forest will change as a result of these actions over the next 50 years.

The Forest Plan provides two levels of management direction: 1) Forestwide direction and 2) area-specific direction. Forestwide direction comes from Forest Goals and Objectives and Forest Standards and Guidelines. Area-specific direction is spelled out in the Management Direction for each of the 106 geographical management areas in the Tahoe National Forest.

Figure V.1 below shows how these two levels fit into the hierarchy of direction that begins with national laws and regulations and funnels down to project-level decisions. Each level is governed by the ones above it. Decisions made at the project level, for instance, must be in accordance with national, regional, forestwide, and management area guidelines. If there is a conflict, the higher-level direction takes precedence over the lower-level ones.

Figure V.1: The Hierarchy of Management Direction



This chapter contains the following information:

Forest Goals: reflect the overall management philosophy of the Tahoe National Forest. These goals provide broad direction for the type and amount of goods and services that the Forest will provide in the future. The objectives and management area direction in the following sections are designed to achieve these goals.

Forest Objectives: annual outputs expected for each resource when the Forest Plan is put to work on the ground.

Desired Future Condition: how the Forest should appear in the year 2030 if the Forest Plan has been properly implemented.

Forest Standards and Guidelines: provide the baseline direction for all management activities on the Forest. By setting minimum conditions of quality, the standards and guidelines ensure that each resource is protected, maintained, or developed in an environmentally sound and cost-effective way.

Management Practices: area-specific actions, measures, or treatments. Unlike Forest Standards and Guidelines, which apply to the entire Forest, practices are applied to management areas on a case-by-case basis. The management prescription, developed during project analysis, determines which management practices will be used on an area.

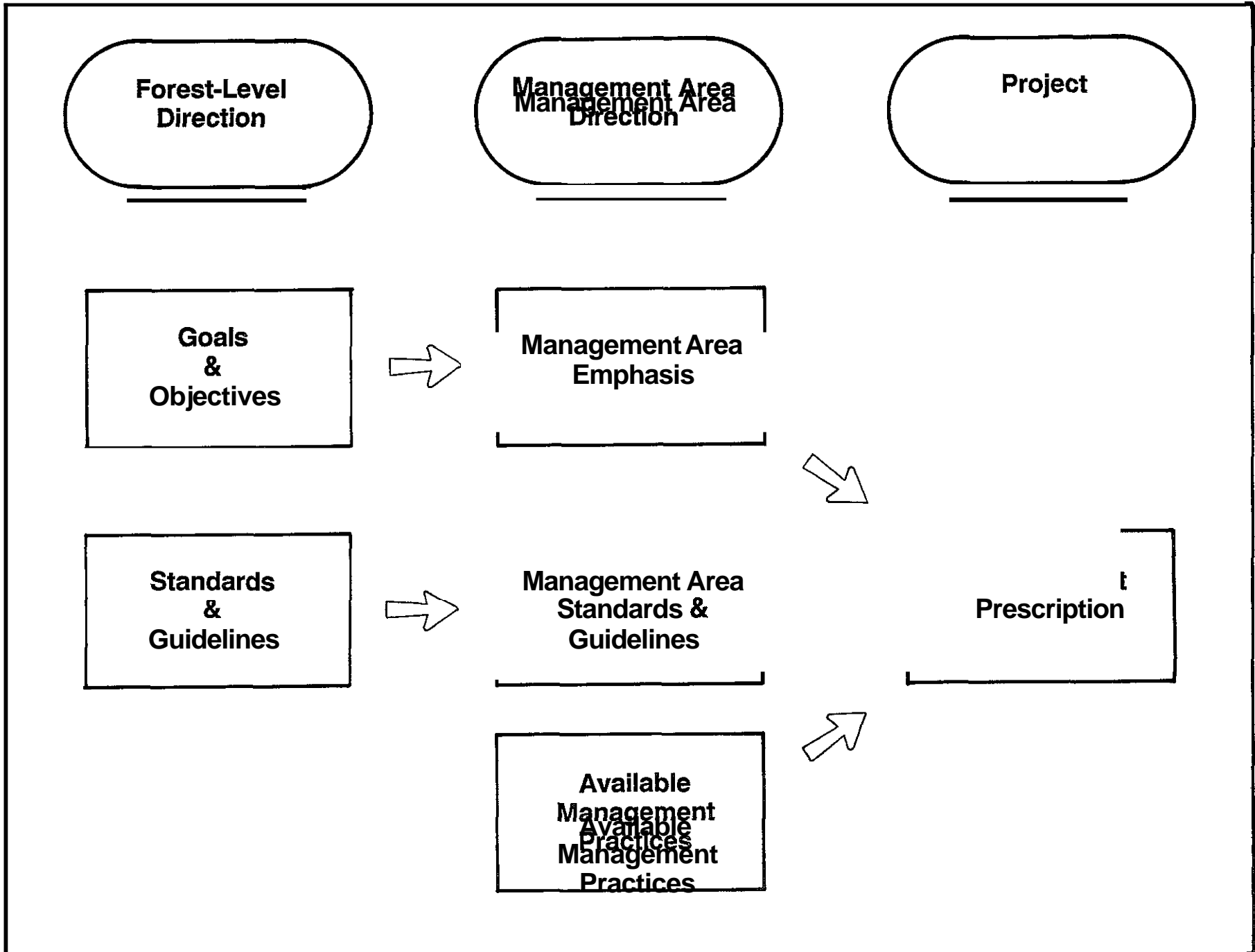
Management Area Direction: specifically directs how each of the 106 geographic management areas on the Forest will be managed. Includes a description of the land, a summary of public issues and opportunities, management emphasis, area-specific standards and guidelines, and a list of practices that can be used to manage the area.

HOW TO USE THIS CHAPTER IN PROJECT PLANNING

This chapter is designed to provide direction for on-site projects such as trail construction, timber sales, or wildlife habitat improvement. Figure V.2 illustrates the flow of this management direction. Follow the steps outlined here to turn Forest Plan direction into visible results.

1. Refer to the Management Area Map in the map packet (planimetric) or in Appendix L (topographic) to find the number of the management area in which your project will occur. Then turn to the Management Direction section starting on page V-69. The management areas are arranged numerically.
2. Familiarize yourself with the description of the area and with its associated issues, concerns, and opportunities.
3. Read the management emphasis section carefully. **THIS IS THE KEY TO MANAGING THE AREA.** Any decision you make in project planning should be in agreement with the intent expressed in this section. The management theme (Rx), which is displayed in Tables V.4 through V.6, was developed during the planning process to help our publics evaluate different alternatives. Although this theme sets the general tone for the area, it does not necessarily dictate what will occur on each and every acre. For instance, even if the theme calls for a timber emphasis, there will be some acres in the management area that have restrictions on harvest intensities, e.g., riparian areas, sensitive species zones, visually sensitive areas, etc. The narrative in this section will give you a more complete picture of the kind of management envisioned for that area.

Figure V.2: The Flow of Direction in Project Planning



4. Turn to the TAN PAGES beginning on page v-15 to find the Forest Standards and Guidelines that pertain to your project. In most management areas, all the Forest S&G's apply. If for some reason a particular S&G does not apply, this exception will be noted in the "Standards and Guidelines" section for each management area

5. Certain resources have a choice of standards and guidelines depending on the intensity and type of management in the MA. Refer to the Management Area Standards and Guidelines section to find specific direction for

Recreation Opportunity Spectrum (ROS)

Visual Quality Objective (VQO)

Transportation Management Policy

Off-Highway Vehicle (OHV) Use

These categories are defined in the Standards and Guidelines. To see exactly where the specific guidelines will apply, refer to the appropriate Resource Element Map provided in the map packet.

6. Move up the hierarchy one more level and read the Forest Goals and Objectives beginning on the next page that pertain to your project. Your decisions should support these goals and objectives and bring the Tahoe National Forest closer to its desired future condition.

7. With this background, you are now ready to develop a management prescription for the area. As you can now see from Figure V2, a prescription is composed of these elements: management area emphasis, management area standards and guidelines, and available management **practices**. The list of available management practices is your toolbox. These practices are considered to be compatible with the management emphasis for the area, and are therefore approved for use in this area. You may or may not use all the practices: they are there to provide flexibility. Turn to the **YELLOW PAGES** to find standards and guidelines for each of the practices. They are coded to help you find them quickly.

MISSION

The mission of the Tahoe is to serve as the public's steward of the land, and to manage the Forest's resources for the benefit of all American people. In all its activities, the Forest will strive to provide for the needs of both current and future generations. The Tahoe workforce will be dedicated to the land, the public, safety, and economic efficiency.

Putting this Plan to work will enhance environmental quality, promote economic growth, and provide a higher level of market and nonmarket outputs than is currently being achieved. The intensified management outlined in this Plan will be essential if projected resource demands are to be met over the next 50 years.

GOALS AND DESIRED FUTURE CONDITIONS

The Forestwide management goals describe the desired future condition of the TNF's resources that this Forest Plan is designed to achieve. The goals are listed below by resource.

RECREATION



1. Provide a broad spectrum of dispersed and developed recreation opportunities in accordance with identified needs and demands
2. Recreation management will be in concert and cooperation with appropriate city, County, State, and other Federal agencies.
3. Work with cooperating water agencies and irrigation districts to maintain desirable water levels on reservoirs through the entire length of the recreation season.
4. Manage the North Fork American Wild River in accordance with Public Law 95-625, which documents the Congressional designation of the River. Implement the management and development plan, the Wild Trout Plan, and the habitat management plan for the North Fork.
5. Complete the inventory, evaluation, and selection of areas that contain outstanding scenic, geologic, botanic, zoologic, and cultural elements before the next Plan revision.
6. Develop a Scenic Byway program on the Forest that provides a wide range of scenic and recreation opportunities combined with opportunities to interpret an array of resource management activities and historic sites. As an integral part of this program, work with County government, State agencies such as Caltrans and State Parks, and other interested groups to identify and nominate potential routes.
7. Develop several National Recreation Trail (NRT) proposals for consideration during the trail implementation planning process. Emphasize developing a variety of trails that would provide for a wide range of recreation uses including hiking, equestrian, snowmobile, cross-country skiing, motorcycle, jeep/OHV, handicapped, and historical activities. Develop proposals for NRT designation that would include needed facilities such as new or augmented trailheads and additional trails to create loops for improved recreational experiences. Identify and evaluate opportunities for trailheads and trails with easy access from urban areas along main routes to the Forest.
- a. In recognition of increasing public interest and concern about wildlife, provide the public with wildlife viewing opportunities as an integral part of recreation and wildlife management planning. Identify habitats where the primary purpose of management is for viewing opportunities in a variety of settings, from developed sites to natural undeveloped areas. Wildlife and recreation managers will work together to develop one management plan per year on the Forest.
9. Recognize the value of semi-primitive motorized (SPM) and non-motorized (SPNM) areas in the Forest because of their scarcity and the demand for the few acres remaining. Closely monitor the loss of inventoried SPNM and SPM land that is not allocated in the Plan for these ROS classes. Where possible, avoid losing SPM and SPNM areas during the planning period by considering options that would not road the areas significantly.

Desired Future Condition

The Forest will provide a variety of opportunities for developed and dispersed recreation experiences. New campgrounds will be constructed and existing facilities will be reconstructed to provide additional capacity. Expected demand for sites will be met. New trail construction and trailhead **construction/reconstruction** will increase dispersed recreation opportunities. Facilities at all developed sites will be maintained at a standard that ensures public health, safety, and user enjoyment.

Off-highway vehicle (OHV) use will be provided for when such use is compatible with other resource programs and uses. An **annual** travel plan will be developed for each Ranger District.

Generally, the Forest **will** be open to OHV use. Closures or restrictions will occur where there is obvious conflict with other uses or where natural resource damage will occur. The following areas will be closed yearlong or seasonally to **motorized** use, including **OHV's**:

- o Roads and trails closed by sign, gate, or barricade, including earthen barricades extending the **width** of the road.
- o Where it is necessary to remove obstacles such as rocks, logs, or soil, or where there would be damage to vegetation.
- o Developed recreation sites (except for routes to and from parking facilities).
- o Key wildlife habitats such as winter range, fawning, and nesting sites (OHV use on designated routes only).
- o Rights-of-way for electrical transmission lines, pipelines, or telephone lines (unless authorized by permit).
- o Riparian zones, unless OHV travel is specifically designated by a Forest **Officer**.
- o Timber plantations where trees are less than 10 feet **tall**.
- o Granite Chief Wilderness.
- o Areas and trails managed for nonmotorized recreation uses.
- o Areas with highly erodible soils.

INTERPRETIVE SERVICES



- 1 Organize and implement an active and multifunctional interpretive service program to promote public understanding of the Forest Service, its mission, and its programs on the Tahoe N.F.
- 2 Provide visitors **with** informative, enjoyable interpretive programs and facilities that enhance the visitor's recreation experiences on the Forest.
3. Create high-quality interpretive programs and products that assist to resolve management problems and reduce management costs.
4. Assist visitors to develop a keener sensitivity, awareness, understanding, and commitment to the environment that encourages thoughtful use of resources and facilities.
5. Coordinate with other local agencies and groups having similar interpretive interests or missions.
6. Organize and implement a Forest interpretive Association.

Desired Future Condition

The Forest **will** provide a variety of interpretive programs that cover a broad range of natural resource areas, not just recreation, and promote public understanding of the resources and their management. Programs are pertinent to current management issues and are presented to the public in an interesting and effective format. An on-going inventory of interpretive sites and visitor responses keeps programs current and timely. The interpretive services program on the Tahoe National Forest is recognized as important by all functional staff areas and, as a result, financing the program is equally shared.

VISUAL MANAGEMENT



1. Maintain visual quality at the visual quality objective (VQO) level specified in each management area, **as** a minimum, but maintain higher visual quality wherever practical and compatible with other goals.

Desired Future Condition

The Forest landscape will be managed to **achieve** the following visual quality objectives (VQO's):

- o Preservation: only ecological changes are evident (**26,912** acres).
- o Retention: management practices are not evident to the casual observer (**163,000** acres).
- o Partial retention: management activities are **visually** subordinate (**311,400** acres).
- o Modification: management practices may dominate the landscape, but activities appear as natural occurrences in the foreground and middleground (**267,146** acres).
- o Maximum modification: management practices may dominate the landscape, but activities should appear as natural occurrences in the background (**25,816** acres).

CULTURAL RESOURCES



1. Inventory forest lands to provide a better understanding of the distribution of cultural resources within the Forest.
2. Provide quality, on-the-ground management of cultural resources and actively maintain the integrity of National Register sites.
3. Implement a cultural resource database system to generate timely and accurate information on the cultural resources within the Forest.
4. Promote studies of inventoried cultural resources to determine the nature of the sites, relationships between **sites**, and the interaction between the natural and cultural systems.
5. Minimize **loss** of cultural resource values due to theft, vandalism, and natural processes through active law enforcement and monitoring.
6. Promote understanding, appreciation, and protection of the Forest's diverse history by developing quality educational and interpretative experiences.
7. Strengthen relationships with contemporary cultural groups having heritage links to the TNF.
8. Expand **partnerships** with local communities, Native American Indians, other agencies, and professionals interested in the cultural resources of the Forest.

Desired Future **Condition**

The TNF recognizes **it's** responsibility as the steward and managers of the nation's cultural heritage as found **within** the Forest. The Forest is committed to **continuing** a balanced, proactive cultural resource program, while focusing on legal compliance. The program will include inventory, evaluation, and interpretation of cultural resources.

Inventory will include surveying **that is** independent of projects to provide a balanced view of past land use patterns within the Forest.

Evaluations will be done on inventoried cultural resources so that the Forest can make informed determinations regarding significance of cultural resources and wise decisions on the preservation of cultural resources for future generations.

Protection efforts will be based on an understanding of the causes and the effects of vandalism, theft, public use, and natural processes and will require a long-term commitment to protection and stabilization.

Interpretation efforts will include an understanding and appreciation of traditional cultures and paleontological resources found within the Forest and the local community and from strengthened ties with universities, other agencies, and professionals knowledgeable about the cultural and paleontological resources within the Forest.

Through the integration of cultural resource management objectives early in project planning, legal compliance will become a by-product of planning rather than the goal.

WILDERNESS



1. Manage the Granite Chief Wilderness area to preserve the wilderness character of its living and nonliving components and to provide for compatible human use and enjoyment.
2. Provide quality wilderness experiences for the public.

Desired Future Condition

Site damage caused by overuse in the Granite Chief Wilderness area will be reduced through user management.

WILDLIFE AND FISH



1. Devote particular attention to preserving habitats for plant and animal species that are associated with mature forest successional stages, riparian areas, hardwoods, and meadows.
2. Manage fish and wildlife habitats to maintain viable populations of all vertebrate species.
3. Provide a diversity of plant and animal communities and tree species to meet visual, old-growth, and overall multiple use objectives; provide special elements (snags, logs, etc.) and critical habitats for dependent species
4. Increase cold water fishery production.
5. Use recovery plans as the template for managing threatened and endangered species.
6. Provide enough quality habitat so that the Forest's sensitive species will not become threatened or endangered

Desired Future Condition

The Tahoe National Forest will continue to work with other agencies, particularly the California Department of Fish and Game, U.S. Fish and Wildlife Service, and local Counties to implement, monitor, and adjust the Forest fish and wildlife management program so that it is satisfactory to each agency (see Appendix D).

FORAGE AND WOOD RESOURCES



1. Emphasize vegetative management systems that will stop downward trends in range vegetative condition and improve those sites that may already be in a degraded state.
2. Maintain or enhance the production of forage and wood fiber.
3. Emphasize economic uses of TNF resources, including timber harvesting, mining, and grazing that are compatible with other resource and amenity values.

Desired Future Condition

Understocked stands with **slow** growth on high sites **will** be replaced by productive, well-managed plantations. Reforested areas will provide a variety **of** multiple use habitats, including hardwoods, snags, down logs, and other habitat components needed for wildlife diversity. Visual quality will be maintained at acceptable levels through vegetation manipulation and cleanup of logging residues. Long-term soil productivity will be maintained or enhanced. Water **quality** will be maintained or improved. Pest levels will be reduced through integrated pest management techniques to meet management objectives. Timber resources will be managed efficiently to provide a sustained **yield** of wood products to supply local industries, as well as to contribute revenues to the U.S. Treasury and local Counties through "25-percent funds." Well-managed vegetative manipulation of timber stands will result **in** a reduction **of** insect and disease problems, will provide access to many areas of the Forest to **facilitate** other resource management programs, and will reduce wildfire hazards. A balanced habitat will **result in** an increase **of** many wildlife species inhabiting the Forest.

Ninety five percent of all rangelands will be brought to satisfactory condition. Management plans will be approved for **all** grazing allotments.

SOIL, WATER, AND RIPARIAN AREAS



1. Produce water of sufficient quality and quantity to meet or exceed identified use requirements and improve water quality by the year 2030.
2. Maintain or improve soil productivity and prevent excessive, cumulative watershed impacts.
3. Conserve **soil** and water resources and prevent activities that will significantly or permanently impair the productivity of the land.
4. Protect streams, lakes, wetlands, streamside management zones, and other riparian areas.

Desired Future Condition

Greater emphasis on environmental quality will have positive effects on the soil and water resources. **Specific** riparian and streamside guidelines will have maintained current riparian conditions. Direct soil and water improvement projects will have stopped the decline and in some cases restored or improved the productivity of key watersheds. In streamflow requirements **will** have protected riparian-dependent communities against incompatible water resource development. Greater emphasis **on** water resources, soil, and watershed management will have resulted in greater project success and less impact **on** soil and water resources. Monitoring will provide information on management-induced impacts on soil and water resources. This knowledge will be used to improve project implementation.

AIR QUALITY



1. Manage TNF activities so that air quality meets the standards under Federal, State, and local laws.

Desired Future Condition

Activities permitted on Tahoe National Forest System lands will support State and local objectives for air quality. As new technology is developed to control automobile and industrial emissions, air **quality** on the Tahoe should improve.

LANDS



1. Acquire non-Federal lands or interests in non-Federal lands to improve the management of Tahoe National Forest System land.
2. Identify Federal lands suitable for land exchange to improve the management of the Tahoe National Forest
3. Consider TNF lands as available for intermingled and adjacent landowners' use only if appropriate and compatible with National Forest purposes
4. Manage National Forest System lands in Urban/Rural/Wildland interface situations with a commitment to work with private landowners and other agency neighbors to resolve possible conflicts while continuing to provide a wide range of multiple use goods and services
5. Emphasize coordination with other major landowners to use opportunities for mutual investments and programs to enhance protection or outputs from adjacent lands
6. Coordinate with local government agencies to protect and enhance TNF resources.
7. Limit electronic installations generally to designated electronic **sites** except for Forest Service facilities, base station communications, radios for special-use permits, and environmental monitoring.

Desired Future Condition

The Forest land base will be increased primarily through land **acquisition** and some land exchanges. The TNF has only a limited number of acres suitable as base for exchange and these parcels are primarily isolated tracts. **Major priorities** for land adjustment will be key wildlife and recreational lands. Land consolidation will minimize rights-of-way across private lands for public access and resource management. Occupancy, fire, and timber trespass will also be minimized or eliminated through **consolidation**. All land adjustment will be conducted in accordance with legislative mandates and Forest Service policy, covered by environmental analysis, and where applicable, coordinated with other State and Federal agencies and private owners.

All property lines will be located and posted to standards.

Special-use permits will only be issued for activities that serve public needs and cannot reasonably be conducted on private lands. Priority will be given to special uses that maximize public benefits, including energy-related uses. Any necessary mitigating measures will be incorporated into permits. Electronic special uses will be limited to designated electronic sites and screened carefully to avoid interference with Forest Service frequencies.

When proposals to develop private inholdings may significantly impact National Forest System lands, these concerns and recommended mitigation measures will be discussed with appropriate County or local officials.

MINERALS MANAGEMENT



1. Minimize the adverse environmental effects of mineral resource exploration, development, and extraction on renewable TNF resources.

Desired Future Condition

Development of energy and nonenergy resources will be encouraged. Through working with Industry, the Forest will develop cost effective and environmentally sound reclamation procedures. The Forest will also work with Industry to further minimize impacts on the land. Any operation with potential to cause **significant** surface disturbance will be covered by a plan of operation with provisions to minimize or mitigate effects on natural and cultural resource values. **Reclamation** plans will address surface disturbance and will contain **provisions** to return disturbed lands to as near the **pre-existing** condition as possible. The value of reclamation bonds will be calculated **in** accordance with the reclamation plan.

FACILITIES



1. Develop an efficient and environmentally sound transportation system that provides access to TNF lands and appropriate access to private lands.
2. Manage existing transportation facilities to **facilitate** resource management, protect wildlife, meet water quality objectives, and provide safe recreation access.
3. Manage TNF lands next to the Pacific Crest National Scenic Trail under the multiple use concept, giving due consideration to the existence of the trail and users of the trail.

Desired Future Condition

The transportation system will provide for user safety, **convenience**, and efficiency and will help **accomplish** land and resource management objectives. Resource activities will be coordinated with road **construction**. The basic arterial and collector road system will be **in** place. Annually, about 18 miles **of** road will be constructed. Arterial and collector roads will be open and constructed so that they are maintainable to a standard safe for a prudent driver **in** a passenger car. Traffic may be **restricted** on roads not constructed for all-weather travel. All other road construction will be **in** support of resource programs. Management of roads will be planned to minimize impacts to roadbeds and to minimize surface **erosion**.

ECONOMIC AND ENVIRONMENTAL EFFICIENCY



1. Provide energy-efficient land management practices where practical.

Desired Future Condition

Forest Service management programs will be conducted using the least-cost method of **meeting** the goals and objectives of the Plan.

PROTECTION



- 1 Protect resources from wildfire, commensurate with resource values, through fire management: treat fuels primarily through utilization and the use of prescribed fire.
2. Provide a law enforcement program that will help ensure compliance with National Forest laws and regulations, maximize the protection and safety of Forest users and Forest Service employees, and minimize damage and loss to resources and facilities.

Desired Future Condition

Fire and fuel management activities will have minimal cost and cause the least net value change on all management areas, except where management **direction requires** a more Intensive level of protection (**i.e., urban/rural/wildland** interface). The fire program will result in Improved protection, but there will still be situations where structures are lost under extreme burning conditions. Prescribed fire will be used to meet wildlife and timber management objectives and will create Improved vegetative conditions.

HUMAN AND COMMUNITY RESOURCES



- 1 Make programs and activities of the TNF available to all persons regardless of race, color, sex, religion, or National origin.
- 2 Provide participants in the Human Resources Program with employment as well as environmental education and awareness.

Desired Future **Condition**

Many of the Forest objectives will be accomplished through the Human Resources Program. Participants in the program will have an understanding of the Forest Service and its many programs. The Tahoe National Forest will have benefitted and will be a better organization for which to work.

RESEARCH



- 1 Participate with the Pacific Southwest Forest and Range Experimental Station and other Forests to conduct administrative studies and to monitor relative soil loss tolerance limits to soil productivity

Desired Future Condition

A cooperative relationship between the managers of the Tahoe National Forest and the **scientists** at the Pacific Southwest Station will be strengthened as a result of targeting research **efforts** to solve resource management problems.

FOREST OBJECTIVES

Objectives are planned, measurable outputs that will bring us, step by step, closer to the goals of the Forest Plan. Table V.I displays average annual outputs by decade for each program element and activity covered by the Forest Plan. These average annual outputs provide long-term direction and help in planning annual work plans and budget requests. Keep in mind that these are averages, actual outputs for individual years may vary from the projected outputs due to fluctuations in conditions, funding, personnel, and priorities.

PROGRAM ELEMENT AND ACTIVITY	UNIT OF MEASURE	(1982) CURRENT PRODUCTION	(1) 1990 1999	(2) 2000 2009	(3) 2010 2019	(4) 2020 2029	(5) 2030 2039
RECREATION							
Developed Recreation- Including Skiing	MRVD	1,598	2,268	2,772	3,276	3,768	4,148
Downhill Skiing (Included in above)		(210)	292	379	492	639	830
Dispersed Recreation	MRVD	2,306	2,925	3,436	3,944	4,452	4,960
Trail Construction/Reconstruction	MILE	23	7.2	20.6	20.6	20.6	0.8
WILDERNESS	ACRE	0	18,705	18,705	18,705	18,705	18,705
WILDLIFE							
Wildlife Habitat Improvement	ACRE	1.1m	1,000	1,000	1,000	1,000	1,000
Wildlife Fish User Days	MMFUD	196	219	233	222	222	223
RANGE							
Livestock Use	AUM	20,000	20,800	20,900	21,600	22,300	23,000
TIMBER							
Sawtimber	MMBF	149.0	1423	1423	1423	1423	1423
Fuelwood	CORD	28,000	28,200	29,115	29,661	30,390	31,125
Reforestation	ACRE	1,450	3,727	3,431	3,304	3,367	4,307
Timber Stand Imp	ACRE	2,596	12,556	5,985	6,704	7,623	7,709
WATER							
Yield Meeting Quality	MAc Ft	1,961	2,080	2,080	2,080	2,080	2,090
Water/Soil Imp	ACRE	120	100	90	0	0	0
MINERALS							
Plans of Operation	NUMBER	150	220	250	300	400	400
Land Purchase/Acquisition	ACRE	2,300	500	500	500	500	500
Landline Location	MILE	115	120	52	30	10	10
FACILITIES							
Arterial, Collector, Local	MILE	99.1	53	43	38	35	35
Road Construction/Reconstruction							
Road Maintenance	MILE	3,250	3,303	3,346	3,384	3,384	3,384
PROTECTION							
Fuel Break & Fuels Treatment	ACRE	4,800	5,200	4,800	6,000	5,300	5,500

FORESTWIDE STANDARDS AND GUIDELINES (TAN PAGES)

This section describes the Forestwide Standards and Guidelines (S&G's) that direct all management practices and activities on the TNF. The Forest S&G's establish the baseline conditions -- the minimum standards and policies -- that must be met when carrying out the Forest Plan. These S&G's apply to all areas of the Forest, and are a higher-level form of direction than management practices (yellow pages).

Standards are principles requiring a specific level of attainment, *i.e.*, a rule to measure against. Guidelines are an indication or outline of policy or conduct. Guideline descriptions found in other Forest Service documents are paraphrased here. Most will contain the following information:

- Resource Practice - What will happen on the ground, *i.e.*, the method of resource management.
- End Results - Desired future state.
- **Timing** - The schedule and **life** of the S&G.
- Land Type - The kinds of lands where the S&G will occur.
- Unit of Measure - The quantity used as a basis for estimating attainment of an activity or practice.

Occasionally, a practice proposed for a management area may be partially incompatible with one or more of the Forest S&G's. In these instances, the Forestwide S&G's will take precedence in resolving the incompatibility. An exception to this occurs when a management area is specifically exempt from a standard. These exceptions are noted in Area Standards and Guidelines listed in the Management Area Direction section.

In other cases, on-site conditions may dictate the need for a variance from Forestwide Standards and Guidelines, Practices, or Management Area Direction. Variances must be justified in the appropriate project analysis document. The recurrence of variances could result in Plan amendment or revision as discussed in Chapter VI.

The following standards and guidelines are grouped by resource element. Use the index below to help you find the S&G's that pertain to your resource area.

TABLE v.2 - LIST OF TAHOE NATIONAL FOREST FORESTWIDE STANDARDS AND GUIDELINES

CODE	TITLE
<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21</p>	<p>Recreation Cultural Resource Management Dispersed Recreation - Standard Dispersed Recreation - Low Standard OHV Motorized Use Trail Rehabilitation (All Trails Including OHV Trails) OHV - Trail Development Recreation & Interpretive Services Planning and Inventory ROS - Primitive ROS - Semi-Primitive Nonmotorized ROS - Semi-Primitive Motorized ROS - Roaded Natural ROS - Rural ROS - Modern-Urban Wilderness Opportunity Level Visual Resource Inventory, Improvement, Planning, and Monitoring VQO - Preservation (P) VQO - Retention (R) VQO - Partial Retention (PR) VQO - Modification (M) VQO - Maximum Modification (MM) Urban/Rural/Wildland Interface</p>
<p>22 23 24 25 26 27 28 29 30</p>	<p>Wildlife and Fish Fish & Wildlife Administration - Coordination and Cooperation Endangered, Threatened, and Sensitive Species Management Wildlife Habitat Management/Viable Populations Diversity Snags Deer Habitat Management Hardwood Management Riparian and Meadow Vegetation Management Meadow Edge Habitat</p>
<p>31 32 33</p>	<p>Range Predator Control Range Program Administration Range Forage Utilization</p>
<p>34 35 36 37 38 39 40 41 42</p>	<p>Timber Timber Program Administration Ground-Based Harvest System Cable Harvest System Skyline Harvest System Helicopter Harvest System Fuelwood, Christmas Tree and Misc Forest Products Sales, Free Use, or Administrative Use Nonchargeable Volume and Yields from Lands Unsuitable for Timber Management Dispersal and Size Variation of Openings Size of Openings</p>

TABLE V.2 - (Continued)

CODE	TITLE
<p>43 44 45 46 47 48 49 50 51 52 53 54 55 56 57</p>	<p>Water, Soil, and Air Cumulative Watershed Effects Analysis Disturbed Watershed Acres Restored by Limiting Intensive Management Water Resource Improvement Riparian Area/Perennial SMZ Management Intermittent/Ephemeral SMZ Management Water Uses and Needs (Consumptive) Water Uses and Needs (Nonconsumptive) Water Quality Protection Snow Course Protection Soil Resource improvement Assessment Soil Restoration Soil Fertility Maintain Soil Productivity Soils/Watershed/Geology Support Air Quality</p>
<p>58 59</p>	<p>Minerals and Geology Withdrawal Review Unstable Areas</p>
<p>60 61 62 63 64 65 66 67</p>	<p>Lands Property Boundary - Location and Marking Coordination With Other Ownerships and Agencies - Coordinated Resource Management Planning Easement Acquisition Special-Use Management - Non-Recreation R/W Grants - Roads and Trails Power-Related Licenses/FERC Electronic Sites Unauthorized Activities - Facilities or Uses</p>
<p>68 69 70 71</p>	<p>Facilities Transportation System Management Facilities Maintenance and Development Forest Highway Development Energy Management</p>

TABLE v.2 - (Continued)

CODE	TITLE
	Protection
72	Integrated Pest Management
73	Cultural Integrated Pest Management Method
74	Mechanical Integrated Pest Management Method
75	Manual Integrated Pest Management Method
76	Fire Integrated Pest Management Method
77	Biological Integrated Pest Management Method
78	Pesticide Integrated Pest Management Method
79	Regulatory Integrated Pest Management Method
80	Fuels Management - Activity Fuels
81	Fuels Management - Natural Fuels
82	Law Enforcement
83	Fire Prevention
84	Fire Suppression

CODE FORESTWIDE STANDARD & GUIDELINE DESCRIPTION

1. Cultural Resource Management

Acres to be managed include historical districts, sites, buildings, structures, objects, or areas that may have historical, cultural, or archaeological value. Activities include:

1. Cultural Resource Inventories: Preliminary examination overview and/or R-5 Supplement survey of areas to identify the presence or absence of archaeological, historical, or other cultural resource properties. Includes preparation and approval of reports. Unit of work is the number of survey acres examined.
2. Cultural Resource Evaluation: A set of properties will be evaluated by a qualified cultural resource specialist to determine the significance of cultural and historical values. Includes evaluation of proposed actions on cultural resources and appropriate consultation and preparation of EA/EIS reports. Includes nomination and/or determination of eligibility of properties for the National Register of Historic Places. Using best professional judgment, the specialist will apply National Register of Historic Places significance criteria as well as the criteria developed in the cultural resources overview.
3. Cultural Resource Protection: Activities and costs related to protection of cultural resource properties. Includes physical protection, public contact, signing, or other activities associated with protection of properties. Where specific management plans are absent, Class I properties and frequently vandalized properties will be considered for inclusion within patrol routes. Includes review, processing, and administration of cultural resource use permits. Unit is properties. Treat all properties as significant until evaluated.
4. Cultural Resource Enhancement: Includes analysis and intensive research of cultural resource properties to provide qualitative and quantitative background data in order to prepare them for public interpretation or scientific or ethnic use. Improvement of the properties with interpretive services and facilities for public use should be reported under IS or other developed recreation sites.

The Forest will foster active programs of research through permits and agreements with qualified institutions and individuals.

Unit is properties.

Can occur on National Forest System lands throughout the Forest.

2. Dispersed Recreation - Standard

Manage for dispersed recreation use in areas that are not classified as wilderness or developed sites in RIM system. Standard management means that signing, clean-up, and other activities are accomplished according to standards and objectives established in approved management plans.

Activity Units-PAOT Days

Output Units-RV Days

Will occur throughout the Forest except in wilderness or developed recreation sites. Will always be used in conjunction with a ROS standard that will define the areas of occurrence.

3. Dispersed Recreation - Low Standard

Manage for dispersed recreation use in areas that are not classified as wilderness or developed sites in RIM system.

Low Standard Management is management at a level below standards and objectives established in management plans.

Activity Units-PAOT Days

Output Units-RV Days

Will occur throughout the Forest except in wilderness or developed recreation sites. Will always be used in conjunction with a ROS practice that will define the areas of occurrence.

4. OHV Motorized Use

The final determination of designated routes will be made by a trail management plan to be completed within one year after the Forest Plan is approved.

Consider the following factors when addressing identified conflicts between nonmotorized trail uses and motorized trail users (OHV)

1. Feasibility and capability of area to accept OHV use (minimal conflict with other resources or users)
2. Separation of the users is preferable, offering both types of users a satisfying recreational experience.
3. Historic use of the trail facility or area
4. Safety of the users
5. Protection of resources and trail improvements
6. Cooperate with the California Department of Parks and Recreation to implement the Statewide Off-Highway Motor Vehicle Recreational Trails Plan

5. Trail Rehabilitation (All Trails Including OHV Trails)

When a resource is significantly damaged or likely to be damaged by trail use, maintenance, relocation, or construction will be given priority over trail closure

Trail may be restricted or closed on a temporary or permanent basis as needed to effect mitigation measures

6. OHV - Trail Development

Favor trail development over indiscriminate cross-country use. Consider the following factors when developing trails'

1. Type of user
2. Protection of resource.
3. Safe access to point of interest or experience
4. Enforcement and manageability.
5. Protection of private land integrity
6. Monitoring and evaluation capabilities

7. Recreation and interpretive Services Planning and Inventory

Activities include

- 1 RIM Inventory Reports and Sampling Maintain the RIM data base Includes conducting all types of use sampling and preparing and updating RIM source documents
- 2 Recreation and Interpretive Services Planning and Inventory, Prepare or review recreation or interpretive management plans, including EA/EIS documents Types of plans covered are Forest Recreation Plans, District Plans, Recreation Composite Plans, Special Area Studies, Dispersed Recreation Plans, and Interpretive Area Plans
- 3 Off-Highway Vehicle (OHV) Use Planning and Inventory Prepare and review OHV plans for new and existing areas of OHV use Includes revision of existing plans, public involvement, and printing of maps and brochures
- 4 Formally Classified Areas (Except Wilderness) Planning and Inventory Prepare and review management plans for classified areas designated with unique RIM Serial Numbers Includes NRA's, W&S Rivers, primitive and scenic areas Excludes wilderness

8. ROS - Primitive

Manage area to meet the recreation opportunity spectrum (ROS) objective of primitive (P)

Area is characterized by an essentially unmodified natural environment of fairly large size Interaction among users is very low and evidence of other users is minimal The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted

Users should have an extremely high probability of experiencing the area as it is described above

Activity Opportunities Viewing outstanding scenery, enjoying unique and/or unusual environments, hiking, cross-country ski touring and showshoeing, horseback riding, canoeing, sailing, other nonmotorized watercraft use, swimming, diving (skin or scuba), fishing, photography, camping, snowplay, hunting (big, small game, upland birds and waterfowl), nature study, acquiring general knowledge/understanding, unguided hiking, general information

Only one ROS class applies to any one area at any one time

9. ROS - Semi-Primitive Nonmotorized

Manage area to meet the ROS objective of semi-primitive nonmotorized (SPNM).

Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size Interaction among users is low, but there is often evidence of other users The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle Public motorized use is not permitted.

Users should have a high, but not extremely high, probability of experiencing the area as it is described above

Temporary vehicle use may be authorized based on special needs, but only for the duration of the project, roads would then be obliterated Examples of special needs are insect or fire salvage, vehicle and equipment access (supported by an escaped fire situation analysis), and placement or removal of facilities under special-use permit

Activity Opportunities Viewing outstanding scenery, enjoying unique and/or unusual environments, hiking, cross-country ski touring and snowshoeing, horseback riding, canoeing, sailing, other nonmotorized watercraft use, swimming, diving (skin or scuba), fishing, photography, camping, snowplay, hunting (big, small game, upland birds and waterfowl), nature study, acquiring general knowledge/understanding, unguided hiking, general information

Only one ROS class applies to any one area at any one time

10. ROS - Semi-Primitive Motorized

Manage area to meet the ROS objective of semi-primitive motorized (SPM)

Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Public motorized use is permitted. Roads constructed and projects planned for resource utilization will strive to maintain the character of the ROS class. Following resource utilization, roads will be closed to public use or put-to-bed unless the road meets a specific recreation use in keeping with the ROS class.

Users should have a moderate probability of experiencing the area as it is described above, except that there is a high degree of interaction with the natural environment. Opportunity is available to use motorized equipment while in the area.

Activity opportunities: Viewing outstanding scenery; enjoying unique and/or unusual environments; hiking; cross-country ski touring and snowshoeing; horseback riding, canoeing, sailing, other nonmotorized watercraft use, swimming, diving (skin or scuba), fishing, photography; camping, snowplay, hunting (big, small game, upland birds and waterfowl), nature study, acquiring general knowledge/understanding; unguided hiking; general information, motor-driven ice and snowcraft, OHV touring, power boating.

Only one ROS class applies to any one area at any one time.

11. ROS - Roded Natural

Manage area to meet the ROS objective of roded natural (RN)

Area is characterized by a predominantly natural-appearing environment with moderate evidences of the sights and sounds of humans. Such evidences usually harmonize with the natural environment. Interaction among users may be low to moderate, but evidence of other users is prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.

Users should have about equal probability to either experience affiliation with other user groups or be isolated from sights and sounds of people.

Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities associated with more primitive type of recreation are not very important. Practice and testing of outdoor skills might be important. Opportunities for both motorized and nonmotorized forms of recreation are possible.

Activity opportunities: Viewing outstanding scenery, enjoying unique and/or unusual environments, hiking, cross-country ski touring and snowshoeing, horseback riding, canoeing, sailing, other, nonmotorized watercraft use, swimming, diving (skin or scuba), fishing; photography, camping, snowplay, hunting (big, small game, upland birds and waterfowl), nature study, acquiring general knowledge/understanding, unguided hiking, general information, motor-driven ice and snowcraft, OHV touring, power boating; picnicking, gathering forest products, auto touring, water skiing and other water sports, automobile camping, trailer camping, viewing interpretive signs, organization camping; lodges, resort-commercial public services, resort-lodging.

Only one ROS class applies to any one area at any one time.

12. ROS - Rural

Manage area to meet the ROS objective of rural (R)

Area is characterized by substantially modified natural environment. Resource modification and utilization practices are primarily to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by large numbers of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.

Users should be able to experience affiliation with individuals and groups, sites and opportunities are convenient. Human interaction and convenience are generally more important than the setting of the physical environment. Opportunities for wildland challenges, risk taking, and testing of outdoor skills are generally unimportant except for specific activities like downhill skiing, for which challenge and risk taking are important elements.

Activity opportunities: Viewing outstanding scenery; enjoying unique and/or unusual environments; hiking, cross-country ski touring and snowshoeing, horseback riding, canoeing, sailing, other, nonmotorized watercraft use, swimming; diving (skin or scuba), fishing, photography, camping, snowplay, hunting (big, small game, upland birds and waterfowl), nature study, acquiring general knowledge/understanding; unguided hiking; general information, motor-driven ice and snowcraft, OHV

touring, power boating, picnicking, gathering forest products, auto touring, water skiing and other water sports, automobile camping, trailer camping, viewing interpretive signs, organization camping, lodges, resort-commercial public services, resort-lodging, competition games, ice skating, scooter-motorcycle use, bicycling, spectator sports, jogging, passive use of developed parks and open space, outdoor concerts

Only one ROS class applies to any one area at any one time

13. ROS - Modern-Urban

Manage area to meet the ROS objective of modern-urban (MU)

Area is characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are designed to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans, on site, are predominant. Large numbers of users can be expected, both on site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

Users should be able to experience affiliation with individuals and groups. Sites and opportunities are convenient. Experiencing natural environments, having challenges and risks afforded by the natural environment, and the use of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly human-influenced parks and open spaces are common.

Activity opportunities: Viewing outstanding scenery, enjoying unique and/or unusual environments, hiking, cross-country ski touring and snowshoeing, horseback riding, canoeing, sailing, other, nonmotorized watercraft use, swimming, diving (skin or scuba), fishing, photography, camping, snowplay, hunting (big, small game, upland birds and waterfowl), nature study, acquiring general knowledge/understanding, unguided hiking, general information, motor-driven ice and snowcraft, OHV touring, power boating, picnicking, gathering forest products, auto touring, water skiing and other water sports, automobile camping, trailer camping, viewing interpretive signs, organization camping, lodges: resort-commercial public services, resort-lodging, competition games, ice skating, scooter-motorcycle use, bicycling, spectator sports, jogging, passive use of developed parks and open space: outdoor concerts.

Only one ROS class applies to any one area at any one time

Note: Although there is no Modern-Urban ROS Class identified on the Tahoe NF, this Class is presented for comparative purposes.

14. Wilderness Opportunity Level

Wilderness opportunity levels include,

Wilderness Opportunity Level I (Most Pristine)

RESOURCE SETTING Area is characterized by an unmodified natural environment. Ecological and natural processes are not measurably affected by the actions of users. Environmental impacts are minimal and restricted to temporary loss of vegetation where camping occurs and along some livestock travel routes. Affected areas typically recover on an annual basis. Impacts are subtle in nature and generally not apparent to most visitors.

SOCIAL SETTING Provides an outstanding opportunity for isolation and solitude free from evidence of human activities and with very infrequent encounters with users. The user has outstanding opportunities to travel across country utilizing a maximum degree of outdoor skills, often in an environment that offers a very high degree of challenge, self-reliance, and risk. User contacts will be very few while traveling and rare to non-existent at the campsite.

MANAGEMENT SETTING Management will strongly emphasize sustaining and enhancing the natural ecosystem. Direct on-site management of visitors will be seldom. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailheads or boundary portals. Contact with visitors within this class by Forest personnel will be mostly reactive and by invitation, with discussion items limited to what visitors want to know. Formal and informal user education will be initiated to inform users about what to expect and how to use the area for optimum benefits to all. Formal regulations, orders, and/or permits will be considered only when less restrictive regulations or programs have consistently failed to achieve desired goals and objectives. Infrequent patrols and monitoring of conditions by appropriate State and Federal agency personnel will be conducted only as necessary to achieve management objectives. All scientific and ecological monitoring actions will be scheduled to meet social setting criteria. Trails will not be constructed and maintenance will be conducted only to protect the resource. No trail signs will be present, and no facilities of any kind will be provided or permitted.

Wilderness-Opportunity Level II

RESOURCE SETTING Area is characterized by an essentially unmodified natural environment. Ecological and natural processes and conditions are minimally affected by the action of users. Environmental impacts are low and restricted to minor losses of vegetation where camping occurs and along most travel routes. Most impacts occur on an annual basis and will be apparent to only a low number of visitors.

SOCIAL SETTING High opportunity for exploring and experiencing isolation from the sights and sounds of people. Low probability of encountering other users. The user has good opportunity to experience independence, closeness to nature, tranquility, and self-reliance through the application of primitive recreation skills. These opportunities occur in an environment that offers a high degree of challenge and risk. Interparty contacts will be low on the trail and fairly low at the campsites, with parties often camped in isolation.

MANAGEMENT SETTING Management will emphasize sustaining and enhancing the natural ecosystem. Direct on-site management will involve minimum visitor contact during the normal use season. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailheads and boundary portals. Contact with visitors by Forest personnel will be mostly reactive and by invitation. In addition to what the visitor wants to know, the opportunity will be seized to present other pertinent site-specific messages. Formal and informal user education programs will be initiated to inform users about what to expect and how to use the area for optimum benefit to all. Formal rules and regulations may be necessary to achieve management objectives and permits may be considered only when light-handed, less restrictive measures have failed to achieve desired goals and objectives. Signs will be permitted within the area and will provide only the minimum information necessary to protect the wilderness resource. Trails will normally be constructed, maintained, and managed to accommodate light and infrequent travel. Routes will be maintained only for resource protection and minimal user safety. Any modification of the natural environment would be minimal. The route should provide the user with an opportunity for testing skills and experiencing a sensation of physical exertion and a feeling of accomplishment.

Wilderness-Opportunity Level III

RESOURCE SETTING Area is characterized by an essentially unmodified natural environment where ecological and natural processes in a few areas are moderately affected by the action of users. Environmental impacts are moderate with most areas along travel routes and near campsites showing moderate losses of vegetation. Impacts in some areas often persist from year to year and are apparent to a moderate number of visitors.

SOCIAL SETTING Moderate opportunities for exploring and experiencing isolation from the sights and sounds of humans. Low to moderate probability of encountering other users. The user has moderate opportunities for experiencing independence, closeness to nature, tranquility, and self-reliance through the application of primitive recreation skills. These opportunities occur in a natural environment that normally offers a moderate degree of challenge and risk. Contact with other visitors both on the trail and while camped will be moderately frequent.

MANAGEMENT SETTING Management will emphasize sustaining and enhancing the natural ecosystem. On-site management will involve routine visitor contact. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailheads and boundary portals. Contact is initiated by Forest personnel during routine duties. Information concerning protection of site-specific wilderness resources will be presented. Formal and informal user education programs will be initiated to inform users about what to expect and how to use the area for optimum benefit to all. Formal rules and regulations may be necessary to achieve management objectives. Signs will be permitted within the area and will include the minimum number necessary to protect the wilderness resource, and for administration. Trails will normally be constructed, maintained, and managed to accommodate moderate use for the majority of the use season. The route will only modify natural conditions to the extent necessary to protect the environment and provide for moderately safe use by a user with limited experience and average physical ability. A few facilities may be provided or permitted, and only those necessary for the protection of the wilderness resource. Natural materials will be used in construction.

Wilderness-Opportunity Level IV (Least Pristine)

RESOURCE SETTING Area is characterized by a predominantly unmodified natural environment where ecological and natural processes are in many locations affected by the action of users. Environmental impacts are generally obvious to most visitors in areas along major travel routes, lake shores, and near major entry points. Impacts often persist from year to year and there may be moderate loss of vegetation and soil at some sites.

SOCIAL SETTING Moderate to low opportunities for exploring and experiencing isolation from the sights and sounds of humans. Moderate to high probability of encountering other users moderate to high. The user has the opportunity for a high degree of interaction with the natural environment, often with low or moderate challenge and risk. Contact with other users will be relatively high much of the time, both on the trail and at campsites. Some parties will camp out of sight and sound of other parties, but this will not be common during the main use season.

MANAGEMENT SETTING Management will be oriented to sustaining and enhancing the natural ecosystem. There will be frequent opportunity for visitor contact with management personnel. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailheads and boundary portals. Special efforts will be taken to contact visitors. Information concerning wilderness management, user conflicts, fire prevention, and other pertinent subjects will be presented. Formal and Informal User education programs will be initiated to inform users about what to expect and how to use the area for

optimum benefit to all. Formal rules and regulations may be necessary to achieve management objectives and permits may be considered only when light-handed, less restrictive measures have failed to achieve desired goals and objectives. Signs within the wilderness may be placed to aid in distributing and dispersing use, and for resource protection purposes. Trails will normally be constructed, maintained, and managed to accommodate heavy traffic for the majority of the use season. The routes will blend into the natural features of the area. Facilities and improvements may be provided and permitted for resource protection or user safety. Facilities when constructed will emphasize the use of natural materials.

15. Visual Resource Inventory, Improvement, Planning, and Monitoring

Activities include

- 1 Visual Quality Inventory. Determine the inherent visual quality (variety classes) and sensitivity levels of an area to provide basic data and interpretations needed for land and resource management planning. Also includes the development of those interpretations termed inventory Visual Quality Objectives.
- 2 Visual Absorption inventory. Determine the visual absorption capability of an area to provide basic data on interpretations needed for land and resource management plans.
- 3 Existing Visual Condition Inventory. Determine the existing visual condition of the landscape to provide a base from which to measure change. This data and interpretation is needed for land and resource management plans. Unit is acres.
- 4 Visual Resource Planning. Develop and administer plans for visual resource projects. Includes plans prepared for resource improvement, special studies, demonstration areas, and other activities that display developed techniques or methodologies for advanced visual resource management. Includes contracted programs, and memos of understanding with agencies or universities. Includes the development or participation in project EA's and/or EIS's.
- 5 Visual Resource Improvement/Rehabilitate and restore facilities, lands, and resources to the visual quality objectives adopted in approved management plans. Unit is acres.
- 6 Visual Resource Monitoring. Monitor the effects of land use on the visual resource. Includes activities initiated for the purposes of management decision, benchmark, or compliance monitoring. Unit is reports.

Unit of Measure is number of acres. Will occur on National Forest System lands throughout the Forest.

16. VQO - Preservation (P)

Manage area to meet the VQO of Preservation.

This visual quality objective allows ecological changes only. Management activities are prohibited, except construction of very low visual impact recreation facilities.

This objective applies to wilderness areas, primitive areas, other special classed areas, areas awaiting classification, and some unique management units that do not warrant special classification. Unit is acres.

Only one VQO class applies to any one area at any one time.

17. VQO - Retention (R)

Manage area to meet the VQO of Retention.

Under Retention, management activities will not be visually evident. Activities may only repeat form, line, color, and texture frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, direction, pattern, etc., should not be evident.

Maintain the appearance of large tree character (typical tree size diameter 36") in travel corridors or foreground zones around reservoirs. Coordinate visual objectives with silvicultural concerns to develop specific management direction for the foreground zone that will maintain visual quality and provide visual variety over time.

Duration of Visual Impact. Immediate reduction in form, line, color, and texture contrast in order to meet Retention should be accomplished either during operation or immediately after. It may be done by such means as seeding vegetative clearings and cut or fill slopes, hand planting of large stock, painting structures, etc. Unit is acres.

Only one VQO class applies to any one area at any one time.

18. VQO - Partial Retention (PR)

Manage area to meet the VQO of Partial Retention

Under Partial Retention, management activities remain visually subordinate to the characteristic landscape. Activities may repeat form, line, color, or texture common to the characteristic landscape, but changes in their qualities of size, amount, intensity, direction, pattern, etc., must remain visually subordinate to the characteristic landscape. Activities may also introduce form, line, color, or texture that are found infrequently or not at all in the characteristic landscape, but they should remain subordinate to the visual strength of the characteristic landscape.

Maintain the appearance of large tree character (typical size 30" diameter or better) in immediate foreground zones around reservoirs and travel corridors. Coordinate visual objectives with silvicultural objectives to create a mosaic landscape character of varying tree heights beyond the immediate foreground from sensitive travel routes.

Duration of Visual Impact Reduction in form, line, color, and texture to meet Partial Retention should be accomplished as soon after project completion as possible or at a minimum within the first year. Unit is acres.

Only one VQO class applies to any one area at any one time.

Note All developed recreation site facilities are expected to meet the partial retention VQO, as a minimum, as seen from outside of the developed site. It is recognized that when a developed site is being used, individual tents and vehicles may not meet the Partial Retention standard.

19. VQO - Modification (M)

Managed area to meet the VQO of Modification

Under Modification, management activities may visually dominate the original characteristic landscape. However, vegetative and landform alterations must borrow from naturally established form, line, color, or texture so completely and at such a scale that their visual characteristics are those of natural occurrences within the surrounding area or character type. Additional evidence of these activities such as structures, roads, slash, root wads, etc., must remain visually subordinate to the proposed composition.

Activities which introduce facilities such as buildings, signs, roads, etc., should borrow naturally established form, line, color, and texture so completely and at such scale that the visual characteristics of the facilities are compatible with the natural surroundings.

Duration of Visual Impact Reduction in form, line, color, and texture should be accomplished in the first year or at a minimum should meet existing regional guidelines. Unit is acres.

Only one VQO class applies to any one area at any one time.

20. VQO - Maximum Modification (MM)

Managed area to meet the VQO of Maximum Modification.

Under Maximum Modification, management activities that involve vegetative and landform alterations may dominate the characteristic landscape. However, when viewed as background, the visual characteristics must be those of natural occurrences within the surrounding area or character type. When viewed as foreground or middleground, they may not appear to completely borrow from naturally established form, line, color, or texture. Alterations may also be out of scale or contain detail which is incongruent with natural occurrences as seen in foreground or middleground.

Introduction of additional parts of these activities such as structures, roads, slash, and root wads must remain visually subordinate to the proposed composition as viewed in background.

Duration of Visual Impact Reduction of contrast should be accomplished within five years. Unit is acres.

Only one VQO class applies to any one area at any one time.

21. Urban/Rural/Wildland Interface

Definition and Management Emphasis,

Urban/Rural/Wildland interface situations may occur when National Forest System lands are adjacent to private lands that have been, or may be, developed within this planning period for recreation, rural, residential, urban, or commercial uses. When National Forest management objectives differ from those of our neighbors, both parties may be impacted.

When such mutual impacts or conflicts are identified, the Forest will work with its neighbors to develop a balanced approach to meet public concerns and resource objectives. The project environmental analysis process will be used on a case-by-case basis to identify a range of issue-specific options and resolutions. Development of mutually beneficial solutions may involve the use of innovative resource practices to meet the needs of all parties involved.

Management Direction

When the Urban/Rural/Wildland Interface situation is determined to exist:

1. Develop alternatives through the interdisciplinary process that address specific resource and public concerns and meet a reasonable balance of multiple use outputs and amenity values.
2. Plan for a significant amount of public involvement, higher costs, and greater time to complete the planning process when public concerns and resource management objectives are in conflict.
3. Use the whole range of management area practices available, as appropriate, to meet the wide range of public expectations and resource needs. Use the Special Cutting-Urban/Rural/Wildland Interface practice (E9), where appropriate, but not to the exclusion of other silvicultural practices.
4. Includes all resource management concerns addressing the Urban/Rural/Wildland interface situation, as the issues can be quite varied. Resource concerns that may be involved include, but are not limited to: fuels management, controlling competing vegetation, insect and disease management, timber harvesting, visual resources, water quality, OHV use, special-use perm&, law enforcement, wildlife and habitat protection, noise, air quality, trespass, and fuelwood cutting.
5. Reduce the potential for future conflicts through coordinated planning with local governments. Provide input on Forest Service management concerns to local, County, and state governmental bodies where Urban/Rural/Wildland Interface situations occur. Develop working relationships with other local entities, such as boards of realtors, homeowner groups, and land developers. Comments on local proposals, such as private land zoning within and adjacent to the Forest, should address the following subjects (as appropriate):

Timberland Production Zones.

Setbacks from the Forest property lines when development is proposed.

Infrastructure needs.

Fire protection.

Wildlife protection.

Access.

Arrangements for cooperative maintenance agreements and snow removal.

Off-highway vehicle use.

22. Fish and Wildlife Administration - Coordination and Cooperation

Coordination includes all activities needed to meet Regional standards and guidelines, legal mandates, planning direction for fish and wildlife, and to establish or maintain structural and nonstructural habitat improvements.

Practices may include activities such as inventories, surveys, and monitoring as well as interactions with other functional activities such as timber sales, timber stand selection, site preparation, intermediate treatments, precommercial thinning, release, fuels management, road location, recreational facility design, and range management.

Cooperation includes interactions with the U.S. Fish and Wildlife Service, other Federal agencies, California Department of Fish and Game, County agencies, development interests, and universities.

23. Endangered, Threatened, and Sensitive Species Management

A Biological Evaluation will be prepared for each project involving suitable T&E or sensitive species habitat. The Biological Evaluation will address measures for maintaining viable populations, potential impacts to the species, and possible alternatives to mitigate or avoid impacts.

FISH AND WILDLIFE EMPHASIS

Develop programs for endangered, threatened, and sensitive fish and wildlife species as outlined in Appendix D. Implement recovery plans and species management plans for threatened and endangered species.

Practices may include coordination with appropriate agencies, inventories, surveys, access control to critical or essential habitats, special area designation, and project coordination measures in timber harvest and other management activities.

Fish and Wildlife Management Direction

Peregrine Falcon - Introduce three nesting pairs into suitable nesting habitat identified during the 1982 peregrine habitat survey. Adopt the Recovery Plan for the Peregrine Falcon (Pacific Population) as the guide for management on the Forest.

Bald Eagle - Manage nesting and wintering habitats for target populations as specified in the species recovery plan. Adopt the Recovery Plan for the Northern Bald Eagle as the guide for management on the Forest.

Lahontan Cutthroat Trout - In addition to the recommendations for the harvest species (Practice C2), restrict access to watersheds containing LCT to prevent illegal harvest and the introduction of competing species. Control beaver populations where their dams keep the fish from reaching spawning areas. Cooperate with the State to explore ways to introduce Lahontans into streams that are suitable for habitation. Follow the direction set forth in the federal management recovery plan.

Spotted Owl - Manage habitats to provide and maintain at least **1,000** acres of suitable habitat in an aforestwide network of spotted owl habitat areas (SOHAs) as described in the Regional Planning Guide (pages 4-15 to 4-22). Develop detailed management plans for each SOHA that describe methods for managing the habitat over time. No scheduled harvest, uneven-age, or even-age timber management systems or combinations of these prescriptions will be considered in these plans.

Pine Marten, Fisher, and Sierra Nevada Red Fox - Immediately initiate development of aforestwide habitat management program for pine marten, fisher, and Sierra Nevada red fox. Develop the program as described in Appendix D, using the best available habitat relationships data and management prescriptions. While the program is being developed, biological evaluations will describe appropriate measures needed to conserve candidate areas for furbearer habitat management. The program will be comprised of the following elements:

Identification of Areas for Habitat Management. Although home range size information has been determined for Sierra Nevada populations of pine marten, it has not been validated for the fisher. Therefore, to address maintenance of viable populations of pine marten and fisher, provide for the maintenance of suitable and optimum habitats that are well-distributed throughout the range of the species across the Forest that will permit individuals of each species to interact throughout the planning area. Assume that managing for viable populations of pine marten and fisher will provide a suitable mix of habitat types to support viable populations of Sierra Nevada red fox. Coordinate habitat management with neighboring national forests and other adjacent lands. Where breaks in suitable habitat exist, implement appropriate management to establish habitat linkages as quickly as possible. Seek cooperative habitat management on private lands where private lands are essential for achieving the Forest furbearer habitat management objectives.

Suitable and optimum pine marten habitat is characterized by moderate to dense (40 to 100 percent) canopy closure, multi-storied, conifer and hardwood-conifer forests. Suitable and optimum habitats provide an average of 2 to 3 large (>24" DBH) snags or stumps and 10 to 20 large logs (>15" DBH x 15' long) per acre. Managed habitats should be adjacent to meadows or riparian corridors and may extend 1/4 to 1/2 mile into upland areas. Managed marten habitats may provide scattered openings that measure 2 acres or smaller. Travelways measuring at least 150- to 300-foot wide will be provided to allow interaction between animals in managed sites.

Suitable and optimum fisher habitat is characterized by dense (60 to 100 percent) canopy closure, multi-storied, conifer and hardwood-conifer forests. Suitable and optimum habitats provide an average of 2 to 5 large (>20" DBH) snags and 2 to 4 large logs (>20" DBH x 15' long) per acre. Managed habitats should include meadows or riparian corridors and may extend well (1/4 to 1/2 mile) into upland areas. Provide travelways with at least 50 percent crown closure in saddles to allow interaction between animals in managed areas. Minimize construction of new roads and regulate public use of roads in managed habitats.

Habitat Management. Develop and implement silvicultural practices to maintain or improve furbearer habitats. The practices will be cooperatively developed by wildlife biologists and silviculturists. Appropriate silvicultural practices will be determined for specific habitat areas through the project-level environmental analyses process.

Monitoring. Develop a plan for monitoring habitat quality. The plan will include specifications for verification of field conditions in managed habitats. Where feasible, periodic monitoring for animal occupancy of managed areas will be conducted in cooperation with the California Department of Fish and Game.

Willow Flycatcher - Retain or establish willow clumps adjacent to streams or within wet meadows 15 acres or more in size. Regulate grazing use and beaver populations to ensure that the lower 6 feet of the willow clumps remain densely vegetated.

Great Gray Owl - Retain or establish no less than 3 snags greater than 24 inches DBH per acre within 500 yards of meadows 30 acres or larger. Erect perch poles in the meadows, one pole per 15 acres. Restrict access and disturbance during the breeding season.

Goshawk - Establish a network of goshawk nesting territories at a density of at least one territory per 18 square miles of suitable habitat.

In areas managed for goshawks, retain at least 50 acres of coniferous forest with trees averaging 21" DBH or larger, and at least 40 percent canopy closure. Provide areas up to 120 acres in size where merging with VQOs, spotted owls, and other management programs is practical. Restrict access and disturbance during the breeding season (1 March - 30 July).

PLANT MANAGEMENT EMPHASIS

Ensure the conservation of plant species and their essential habitats wherever they occur as required by FSM policy and standards. Manage sensitive plants to ensure that species do not become threatened or endangered because of Forest Service activities, specifically, known populations of *Arabis constancer*, *Carex pauciflorus*, *Eriogonum umbellatum* var. *torreyanum*, *Ivesia aperta*, *Ivesia senecioleuca*, *Ivesia webben*, *Lewisia canteloni*, *Lewisia pygmaea* spp. *longipetala*, *Lewisia serrata*, *Phacelia stebbinsi*, *Silene invisa*, and *Vaccinium coccinium*.

Plant Management Direction:

Prohibit collection of sensitive plant species except when authorized by the Regional Forester. Modify or exclude activities not compatible with survival of threatened or endangered species. When revegetating disturbed sites or making improvements in landscaping, require use of plant species native to the area or species approved for local use.

Plan management activities to provide for the continued existence and/or enhancement of sensitive plant species. Refer to the TNF Sensitive Plant Management Guidelines and the individual species management guides (as developed) for the management of individual sensitive species.

Protect known populations of *Mahonia sonnei*. Artificially supplement natural propagation on natural habitat. Details of management are found in the species recovery plan.

24. Wildlife Habitat Management/Viable Populations

Manage for viable populations of all fish and wildlife as prescribed in Appendix D.

Develop and implement a habitat management program for fish and wildlife as described in Appendix D. Continue to use Standards 23 and 27 - 30 and Practices C5 - C9 until management programs are developed for each species and species group listed in Appendix C.

25. Diversity

Provide horizontal diversity by maintaining at least 5 percent of the mixed-conifer, red fir, and eastside pine types in each of seven seral stages forestwide. The seral stages are defined in the Regional Planning Guide (pages 4-24 and 4-25). Whenever possible, separate regeneration areas by at least 330 feet when their aggregate area will exceed 40 acres.

Provide vertical diversity commensurate with established VQO's and habitat objectives for management emphasis species. Whenever practical, design cutting unit shapes and sizes to accommodate prevailing VQOs and habitat objectives for management emphasis species.

OLD GROWTH

Develop a Forestwide program for management of old-growth forests (the last successional stage in the forest ecosystem). While the program is being developed, evaluate old-growth resources for the planning compartment as a whole, using site-specific project analyses, when planning individual timber sales.

- 1 Old-growth values shall be considered in designing the dispersion of old growth, which may range from areas of old-growth lands for wildlife habitat (e.g., spotted owls and furbearers) to areas designated for public visitation (special interest areas). In general, areas to be managed for old growth will be distributed over the landscape so as to minimize old-growth fragmentation.
- 2 Consider the following options when planning for old-growth management
 - Where goals for providing old-growth values can be met by such measures as extending the final harvest age well beyond the normal rotation or by using silvicultural practices that maintain or establish specific old-growth values, these lands may be considered suitable for timber production. Silvicultural prescriptions will provide for a pattern of long-term forest replacement that ensures the continued presence of old-growth forests over time.
 - Where goals for providing for old-growth values are not compatible with timber harvesting, lands may be classified as unsuitable for timber production.
- 1 Apply the following priorities when identifying candidate areas to be managed for old-growth values
 - Areas that serve the needs of several resources, such as riparian habitat, spotted owls, furbearers, watershed, and visuals.
 - Areas that best provide for old-growth values and are not managed for commercial timber production.

26. Snags

To the extent possible, provide and maintain an average of **1.5** snags per acre in each timber compartment. Except where public safety otherwise dictates, the following minimum specifications shall apply:

- 1 **1.2** snags per acre with **15-24** inch DBH and over **20** feet high
- 2 **0.3** snags per acre over **24** inch DBH and over **20** feet high

Snags used to meet the average should be comprised of: **1)** hard snags where possible, and **2)** a mix of hardwood and conifer species. The snags should be widely distributed through the planning area, but more should be concentrated in riparian areas, noncommercial lands, and near the edges of meadows and natural openings.

Provide sufficient live trees in the compartment to maintain prescribed snag densities over time. Where site conditions allow, use live culls and other unmerchantable trees for future snags. Do not assume that sufficient replacement snags will be provided by noncommercial lands, riparian areas, or other lands outside of the proposed harvest units.

Consider managing snags and replacement trees as clumped aggregates within managed stands. The clumps should range from **0.25** to **2.0** acres in size and be identified on stand record cards. The clumps should also be widely distributed within the compartment.

For westside planning compartments, a goal of **2** snags per acre is desirable. This goal should be pursued only when supplemental snags can be provided on lands managed for SOHA's, riparian resources, visual quality, hardwoods or protection of sensitive watershed lands. Eighty percent of snags should measure **15-24** inches DBH, and the remainder should be over **24** inches DBH.

Recruitment of snags from green trees may be accomplished through girdling, silvicide injection, or topping. Topping should be considered the method of choice.

Consider the following actions that benefit wildlife:

- 1 Leave all snags and down logs in riparian areas where consistent with safety and fishery needs.
- 2 Leave all soft snags where possible, as long as safety needs are met.
- 3 Save live culls for future snags where consistent with stand management objectives.
- 4 In firewood areas, designate snags. In inaccessible terrain.
- 5 In snag-deficient areas, cut only hazardous snags.

Snag Policy Exclusions: The previously mentioned policy guidelines do not apply to areas where snags could endanger life and property. Areas excluded from the snag policy include:

- 1 Public use areas such as campgrounds, developed ski areas, summer home tracts, overlooks, picnic areas, etc.
- 2 Powerline or special-use permit rights-of-way.
- 3 Road and trail maintenance zones. Distance from the road and trail will depend on snag height.
- 4 All permittee, contractor, or Forest Service project areas where snags are determined to be a safety hazard.
- 5 Designated fuel breaks.
- 6 Fire control areas. Snag felling for fire control efforts is at the discretion of the Incident Commander.

27. Deer Habitat Management

The management goal for key deer areas (see wildlife map in planning file) is to provide the following balance in key habitat elements over time: about 25 percent of the acres will provide predominantly herbaceous forage, about 35 percent of the acres will provide predominantly shrubs for forage and cover, and the remaining 40 percent of the acres will provide trees for thermal and hiding cover. When existing sites do not meet these criteria, take steps to accomplish the goals as soon as possible.

Herbaceous Forage - Areas counted as herbaceous forage may be meadows, appropriate riparian corridors, succession stages of regenerated stands, or other areas providing considerable herbaceous vegetation. When succession stages of regenerated stands are used, the ground cover should average at least 40 percent in grasses and forbs across the stand after seedling trees are certified as established. No standard applies in regenerated stands until the trees are certified. When areas other than regenerated stands are used, herbaceous vegetation should cover at least 50 percent of the ground surface.

Shrubs - Areas counted as shrubs may be natural shrub fields or succession stages of regenerated stands. When succession stages of regenerated stands are used for this component, the ground cover should average 20 percent in preferred browse across the stand. When areas other than regenerated stands are used, shrubs should average 50 percent of the ground surface.

Tree Cover - Areas counted as thermal and hiding cover will typically be young to mature conifer stands where the brush has been shaded out.

Limit vehicle access on key deer winter ranges when deer are present. Also limit vehicle access in key summer range habitats during periods of migration and fawning. Retain or establish roadside screening along open roads in areas important for migration, fawning, or concentrated seasonal use.

28. Hardwood Management

Manage hardwood stands to provide desirable wildlife habitat. Pure hardwood stands identified in the Forest database will not be converted to conifers. Coordinate management of hardwood-conifer stands with silvicultural activities that promote growth and regeneration. Consider seeding, planting, fertilizing, and fuelwood control as desirable hardwood management practices.

Management Direction

On noncommercial National Forest System lands and pure hardwood stands that exceed five acres in size, manage to preserve or enhance existing hardwood stands for wildlife. On CAS timber lands where hardwoods occur naturally, provide an average of 30 square feet per acre basal area in hardwoods in mixed stands of hardwoods and conifers (identified as X3P and X4P) and 5 square feet per acre on other CAS strata.

Approximately one half of the hardwood basal area in each stand should consist of trees older than 80 years. Where possible, a mix of hardwood species is desired.

Deer - Provide sufficient hardwoods to meet local deer herd plan goals. In areas currently occupied by hardwoods, a goal will be to maintain wide distribution of hardwoods within the commercial National Forest System lands in each planning compartment. A second goal will be to emphasize hardwood management in hardwood-dominated stands.

Gray Squirrel - In pure hardwood stands measuring 5 acres or larger, provide an average of 80 square feet per acre. Manage hardwoods, particularly tan oak, to produce optimum mast crops. Thin as needed to expose the crowns of dominant hardwood trees. Where site conditions allow, provide for a broad mix of hardwood species. Retain cavity trees at a density of 2 trees per 5 acres.

Black Bear - Where bears are a MIS, hardwoods should be distributed as stands, aggregations, or inclusions rather than individual trees.

Mountain Quail - Where quail are a MIS, hardwoods should be distributed as stands, aggregations, or inclusions rather than individual trees.

Turkey - Where turkeys are a MIS, hardwoods should be distributed as stands, aggregations, or inclusions rather than individual trees. Mold species composition to provide as many hardwood species as possible.

Band-tailed Pigeon - Where pigeons are a MIS, the hardwoods should be distributed as stands, aggregations, or inclusions rather than individual trees. Hardwood production is particularly important in and adjacent to riparian areas. Thin heavily to expose crowns on the dominant hardwoods, thus producing nesting sites and increasing mast production. Mold species composition to provide as many hardwood species as possible. Retain clumps of madrone on side slopes and ridge tops.

29. Riparian and Meadow Vegetation Management

improve the habitat capability for riparian and meadow-associated wildlife. Practices may include activities such as thinning, pruning, aspen regeneration, prescribed burning, planting, seeding, fertilization, lodgepole pine cutting, control of livestock, and human access control as prescribed in Appendix F.

30. Meadow Edge Habitat

Definitions and Management Emphasis:

Meadow edges are forested areas not included in riparian areas and SMZ's that are important for cover and forage for wildlife species dependent on meadows and the adjacent forest edge. Generally, the following edge measurements are thought to be the most important for wildlife: 1) meadows 10 acre or larger, the adjacent 100 feet, and 2) meadows 0.1 to 0.9 acre in size, the adjacent 25 to 75 feet.

Direction For Management of Meadow Edges

Manage vegetation in and around meadows to meet the needs of the associated mountain meadow wildlife management indicator species. Overall goals are to 1) protect or enhance aspen, willow, alder, and other riparian vegetation, 2) maintain habitat diversity at the meadow edge, and 3) provide sufficient snag densities.

For meadows 10 acre and larger, provide vegetative structure in the meadow edges that is consistent with the habitat needs of the associated management indicator species. Desired habitat objectives for meadow edges will be identified by a wildlife biologist.

For meadows under 10 acre, management decisions will be made at the project level.

Locate new landings away from meadow edges.

Minimize damage to residual vegetation by controlling skid road location and practicing directional felling within meadow edges.

Locate roads away from meadow edges where alternative routes are available.

Prohibit salting in the meadow edge.

31. Predator Control

Wildlife damage prevention projects on the TNF will be carried out in accordance with methods recommended by the involved State agency and/or the FWS and approved by the FS. These projects will be conducted within the framework of the appropriate plans developed jointly by both agencies in conjunction with the State, BLM, and other cooperators. The FWS will also provide extension-type assistance. Generally, only the FWS or an approved State agency is authorized to conduct predator control projects to control rodents damaging resources on National Forest System lands may be authorized by the FS, an approved State agency, or the FWS.

32. Range Program Administration

Protect, utilize, improve, inventory, and evaluate the range resource as needed. Activities include range allotment management plans and inventories, administrative monitoring, evaluations, research, cooperation, and preparation of environmental documents. This applies to all available, capable, and suitable range lands both in and outside existing allotments. Fully utilize and improve the condition of the permanent range type by enacting improved grazing systems. Examine all vacant allotments and return them to active AUM production if feasible. Fully utilize transitory range opportunities on the Forest in conjunction with the timber program and range allotment planning.

33. Range Forage Utilization

Forage utilization standards described in FSH 2209.21, Range Environmental Analysis Handbook, will be used initially to develop allowable use criteria. The interdisciplinary team develops the final allowable use criteria. These criteria must be based on the factor that becomes critical or limiting first (either a forage or nonforage factor). In some range areas it may be necessary to establish more than one set of allowable use criteria. This is especially true for riparian areas. Riparian areas will be managed so that riparian-dependent resources (water, fish, wildlife, riparian-related aesthetics, riparian-related vegetation) take precedence over nonriparian-related resources. Where there is a conflict, it will be resolved in favor of the riparian-dependent resource.

Allotment management plans must establish allowable use criteria for each range type within the allotment. Long-term trend studies must then be conducted to determine if allowable use criteria are correct, and to determine range condition. Management systems will be designed according to allowable use standards outlined in FSM 2209.21. These standards limit the extent to which a key forage species or group of key forage species may be grazed on key areas. Allowable use standards must provide for sufficient herbage residue of key forage species to ensure good plant vigor, favorable range trend, favorable fish and wildlife habitat, and good watershed conditions.

34. Timber Program Administration

Administer activities to protect, utilize, improve, inventory, and evaluate the timber resource. Activities include timber management plans and inventories, stand examinations and prescriptions, timber sale preparation and administration, reforestation and timber stand improvement preparation and administration, monitoring evaluations, and preparation of environmental documents.

This practice applies to all available, capable, and suitable lands that are identified as having the potential of producing at least 20 cubic feet per acre per year. The unit of measure is average Forest cost, including interdisciplinary involvement, per acre.

35. Ground-Based Harvest System

Perform yarding with horses, tractors, rubber-tired skidders, and light flotation forwarders. The yarding system is basically ground lead with some machinery capable of producing lift to one end of the product.

The harvesting practice is capable of harvesting under any cutting method within its operational limitations. It is the primary harvest practice on slopes 0-30 percent, with some application on 30-50 percent slopes with special precautions.

Maximum acceptable yarding distances are affected by many factors including log size, volume per acre, terrain, etc. The following are some optimal and maximum yarding distances that can be considered in planning ground-based operations. They are listed by yarding method: optimum and maximum (respectively): Horse 100-200', 400'; tractor: 300-800', 1500'; rubber-tired skidder 500-1000', 2000', light flotation forwarder 700-1200', 2500'.

The loading equipment used in this practice is usually rubber-tired, requiring landings of a minimum size necessary to store and load logs.

36. Cable Harvest System

Perform yarding with a cable machine that is not required to provide partial or full suspension of products. This harvesting practice is limited to the clearcut cutting method. It includes the following cable logging systems: mobile shovel yarder, high lead, grablinski, and skyline systems without lateral yarding ability. The practice has a large range of yarding distances, from 200-600' for mobile shovel yarders to over 2500' for some of the skyline systems.

The practice can provide a high level of ground disturbance, which may or may not be desirable. The practice is usually applied only on slopes over 30 percent.

37. Skyline Harvest System

Perform yarding with a skyline cable yarding machine that is required to maintain partial or full suspension of the products in the skyline corridor. This harvesting practice is capable of harvesting under any cutting method. This harvesting practice has lateral yarding ability without partial suspension required during the lateral yarding. The practice has a large range of yarding distances, from 500' to over 5,000'. Most common yarding distances are 500' to 2,000'. The harvesting practice is very sensitive to layout of landings, anchors, and payloads. This practice is usually applied only on slopes over 30 percent.

38. Helicopter Harvest System

Perform yarding with a helicopter that has enough payload capacity to totally suspend products from the woods to the landing.

The practice is economically very sensitive to all layout factors, with volume per acre and yarding distance most critical. The practice creates no soil disturbance due to yarding and can be used with any cutting method.

This harvesting practice can be applied to any slope class, however, it is most commonly used on steeper (35 percent and greater) inaccessible slopes. The practice has trouble meeting fuels management objectives, utilization standards, and reforestation objectives because of high costs.

39. Fuelwood, Christmas Tree and Misc. Forest Products Sales, Free Use, or Administrative Use

Prepare, sell, administer, and utilize fuelwood, Christmas trees, and other miscellaneous forest products. Examples of Other miscellaneous forest products are posts, rails, decorative greenery, cones, burls, shingle bolts, etc. This practice includes all products other than sawlogs sold or utilized under the free use or administrative use permit authorities

This practice applies to all forested land. Generally, the forested land must be accessed by road, occur on slopes less than 30 percent, and have the product available within generally 500-1000 feet of the road or access point. The practice generally applies to land steeper than 30 percent if the product is within 100-200 feet of an access point. The unit of measure for economic purposes is dollars/acre. For other accountability, it is acres.

40. Nonchargeable Volume and Yields from Lands Unsuitable for Timber Management

Use appropriate timber management activities to meet the multiple use objectives on land not capable, available, or suited for timber production. Timber harvest from these areas will be programmed as needed to meet objectives such as research on experimental forests, multiple use objectives other than timber production, and improvement of administrative sites. This harvest volume includes material such as live cull, dead timber, and noncommercial species and products as well as all volume removed from unsuitable areas. These volumes were not included in the growth and yield projections for the allowable sale quantity, but will be included in the annual programmed sale quantity.

This practice applies to all available land identified as not suited for timber production. The unit of measure for nonchargeable timber offered is MBF. For reforestation and other stand improvement, the measure is in acres.

41. Dispersal and Size Variation of Openings

Openings created through even-age management will generally be surrounded by manageable timber stands 5 acres or larger in size, except that on a case-by-case basis, openings may have up to 15 percent of their periphery in common with other openings.

An opening created by timber harvesting will no longer be considered an opening once the number of trees free to grow equal the minimum specified in the Region 5 Supplement of the Forest Service Manual (FSM) 2472.03 and have reached 4.5 feet in height. Greater heights may be approved by the Forest Supervisor on a project-by-project basis to meet other resource objectives.

42. Size of Openings

The maximum size of openings created with even-age management will not exceed 40 acres in any forest type. Openings larger than this may be created in cases of catastrophic occurrences such as fires, windstorms, and insect attacks. Specific timber sales that include openings larger than 40 acres will require review by the Regional Forester and 60 days public notice.

43. Cumulative Watershed Effects Analysis

Perform CWE analysis on all 3rd Order or smaller watersheds (usually 500-2,000 acres) during timber sale planning. This often involves several watersheds, some of which may extend into adjacent compartments, where this occurs, the analysis may be combined for both compartments. The R-5 Methodology, which is currently being incorporated as Chapter 20 of FSH 2509.22, will be used for this analysis.

44. Disturbed Watershed Acres Restored by Limiting Intensive Management.

Limit intensive management (e.g., range, timber management, OHV's, etc.) on lands that are in a declining hydrologic condition (11,500 acres). This includes gullied high-elevation ridgetop and other areas with accelerated erosion as identified in the Soil Resource Inventory (SRI) and Watershed Improvement Needs (WIN) inventory. This land will be allowed to recover naturally, physical treatment is limited because of excessive cost, poor access, or lack of technology.

Specific areas and their management restrictions will be identified during project planning using the Forest SRI and field verification.

45. Water Resource Improvement

Implement Practice F1 to correct soil erosion and water quality problems that are currently unidentified and usually of a minor nature. Add these to the Forest WIN inventory as they are discovered. The unit of measure is acres.

46. Riparian Area/Perennial SMZ Management

A Definitions and Management Emphasis

- 1 Riparian areas are defined as (1) areas within 100-foot horizontal distance from the edge of standing bodies of water; (2) areas within 100-foot horizontal distance of perennial stream channels; and (3) all wetlands. The width will be greater than 100 feet where needed to include the area that is recognizably dominated by riparian vegetation.
- 2 Streamside Management Zones (SMZ's) are administratively designated zones adjacent to perennial, intermittent, and in some cases ephemeral streams. Special management practices must be used within and on nearby lands in order to maintain or improve watershed resources (e.g., water quality, channel stability). SMZ's may include wetlands, floodplains, riparian areas, inner gorges, perennial streams, intermittent streams, ephemeral streams, and the terrestrial ecosystem adjacent to these areas.

B General Direction For Management of Riparian Areas and Perennial SMZ's

The following direction will be used to implement BMP's 18 (SMZ Designation) and 73 (Protection of Wetlands). This direction MUST be used concurrently with Forest S&G 50 (Water Quality Protection), FSM2526, FSM2530, FSH2509 22 (Chapters 30 and 40) and the Forest Riparian Area/SMZ Guides (Forest Plan Appendix F).

1. Variable-width SMZ's adjacent to perennial streams and lakes (including the 100-foot riparian zone) will be managed so that riparian-dependent resources (water, fish, wildlife, riparian related aesthetics, riparian related vegetation) take precedence over non-riparian related resources such as timber, grazing, mining, structures, and transportation. Where there is a conflict, it will be resolved in favor of the riparian-dependent resource.

The riparian-dependent resource that is most limiting will dictate the amount of activity allowed in riparian area perennial SMZ's.

2. Vary perennial SMZ widths (minimum 100 feet) by taking into account stream class, channel stability, sideslope stability, flow characteristics, inner gorges, very high EHR's, and extent of existing effective ground cover (EGC).
3. To maintain suitable water temperatures for cold-water fisheries, manage vegetation along perennial streams to provide a minimum of 80 percent of the maximum July shade potential. Case-by-case variance from this may be allowed where all riparian-dependent resource goals can be maintained.
4. Management intensity is low and minimal yields are scheduled from this zone.

47. Intermittent/Ephemeral SMZ Management

A Definition and Management Emphasis

Streamside Management Zones (SMZ's) are administratively designated zones adjacent to perennial, intermittent, and in some cases ephemeral streams. Special management practices must be used within and on nearby lands in order to maintain or improve watershed resources (e.g., water quality, channel stability). SMZ's may include wetlands, floodplains, riparian areas, inner gorges, perennial streams, intermittent streams, ephemeral streams, and the terrestrial ecosystem adjacent to these areas.

B General Direction For Management of Intermittent and Ephemeral SMZ's

The following direction will be used to implement BMP 18 (SMZ Designation). This direction MUST be used concurrently with Forest S&G 50 (Water Quality Protection), FSM2530, FSH2509 22 (Chapter 30), and the Forest Riparian Area/SMZ Guides (Forest Plan Appendix F).

1. Vary SMZ widths by taking into account stream class, channel stability, sideslope stability, flow characteristics, inner gorges, very high EHR's, and extent of existing SMZ effective ground cover (EGC).
2. Maintain the minimum EGC in Class I and II intermittent SMZ's.
3. Regarding Class III and IV intermittents and all ephemerals, either retain the minimum SMZ EGC or include these streamside areas in harvest unit-wide ground cover goals as stated in S&G 55 (Maintain Soil Productivity).

48. Water Uses and Needs (Consumptive)

Use National and Regional procedures to secure water rights for existing and foreseeable NFS consumptive uses. Where applicable, water will be obtained and used in accordance with the reservation doctrine. Where the reservation doctrine or other Federal law is not applicable, water rights will be obtained in accordance with State law, either appropriative rights, riparian rights, or overlying rights will be exercised, as appropriate.

Water rights will be purchased if they are essential to Forest Service activities and not otherwise available.

In the case of non-Forest Service water use proposals, the Forest Service will exercise its rights according to State law (including the use of Protest) if necessary to protect beneficial uses of water on NFS lands.

The TNF, in all matters related to water use and water rights, will endeavor to work cooperatively with the State.

49. Water Uses and Needs (Nonconsumptive)

Determine nonconsumptive instream flow needs on a case-by-case basis during project environmental assessment and/or adjudication proceedings, using the R-5 or Instream Flow Group (IFG) methods. Also, determine other nonconsumptive needs such as recreation pools using appropriate state-of-the-art procedures. Water rights for nonconsumptive purposes will be obtained using appropriate Federal and State procedures. Determination of nonconsumptive needs in response to specific project proposals and adjudication proceedings will receive the highest priority, presently the tributary streams in the Truckee-Little Truckee River system are high priority streams due to a highly probable adjudication of this watershed.

50. Water Quality Protection

Use Best Management Practices (BMP) to meet water quality objectives and maintain and improve the quality of surface water on the Forest. Methods and techniques for applying the BMP will be identified and documented during project level environmental assessments and incorporated into the associated project plan and Implementation documents. (See Plan Appendix E)

About 100 BMP's are detailed in the PSW Region 208 Planning document titled Water Quality Management for National Forest System Lands in California⁴, which is currently in the process of being incorporated as Chapter 10 of FSH 2509 22 (Soil and Water Conservation Handbook). This handbook chapter will be used for project-level application of BMP's.

The unit of measure is acre-feet.

51. Snow Course Protection

Protect established snow courses and related hydrometeorological data sites from any activities such as road building, timber harvest, or vegetative disturbance, that will affect snow accumulation or measurement. Any activity proposed within 400 feet of any sampling point will be reviewed and agreed to by the State Department of Water Resources (DWR) and other interested snow survey cooperators.

Make no change in management or use of data sites that would impair their value for data collection unless there is no alternative. Where unavoidable circumstances exist, the Regional Forester must approve the change, and the DWR must be notified in writing before the change occurs. Such notice should be given sufficiently far in advance so that an alternative data site can be selected and a correlation between the two can be established. A five-year minimum is desirable. Compatible uses of the site will be continued.

Notify the DWR whenever natural disturbances such as fire, insect and disease infestation, flood, etc., affect data sites.

52. Soil Resource Improvement Assessment

During timber compartment environmental analysis, evaluate the opportunities to improve soil productivity on the 23,000 acres of capable forest land currently identified in the Soil Resource Inventory (SRI) as being in an 'altered' condition. Initiate improvement actions through project plans.

53. Soil Restoration

During project planning, identify areas of soil damage and abandoned roads in need of rehabilitation. Include these areas in project plans for restoration and improvement. Include these areas to the Forest WIN inventory.

54. Soil Fertility

Identify and evaluate the need for soil fertilization and other soil improvement techniques in areas where the soil is likely to respond to treatment

55. Maintain Soil Productivity

Forest soil is considered a nonrenewable resource because an inch of soil takes thousands of years to form. Land management activities can alter the soil in varying degrees. These changes may or may not significantly affect the long-term productivity of the soil.

This standard and guideline has been designed to maintain long-term soil productivity on-site. Long-term soil productivity can be affected by changes in three soil characteristics: soil porosity, soil cover, and soil organic matter. When this standard and guideline for these three soil characteristics is met on at least 85 percent of an activity area (at least 95 percent where ground-based equipment is not used within the activity area), the soil is considered to be in an acceptable condition, without significant impairment to its long-term productivity. An activity area is the area on which a soil-impacting activity has occurred or is planned. An activity area includes temporary roads, landings, skid roads, and skid trails; system roads are not included.

Although implementation of this standard and guideline will also reduce sedimentation and off-site impacts on water quality, this is not its primary purpose. Other standards and guidelines and the implementation of Best Management Practices (BMPs) are designed to minimize the off-site impacts of erosion.

It may not be possible to meet this standard and guideline during fire salvage, rehabilitation, or recovery activities, including reforestation of brush fields. It may also be difficult to achieve in areas where existing plant communities have developed inadequate cover or duff, or where resource objectives are in direct conflict. In these situations, a soil scientist will work with the project interdisciplinary team to develop site-specific management prescriptions that approximate this standard and guideline, and do not result in a significant reduction (see FSH 2509 18) in soil productivity.

For a detailed discussion of the logic used to develop this standard and guideline, see Appendix H of the EIS.

Standard for Soil Porosity:

The soil is considered to be in an acceptable condition when compaction or puddling reduce total soil porosity by no more than 10 percent as compared to the undisturbed soil.

When less than 85 percent of an activity area is in an acceptable soil condition as defined above, tillage will be used to rehabilitate the soil. Either erosion control measures shall be installed or tillage completed prior to any seasonal period of precipitation or runoff. The objective of tillage is to fracture the full depth of the compacted layer to produce friable soil as defined in FSH 2509 22.

Refer to FSH 2509 22 for details in applying this standard and guideline.

Standard for Soil Cover.

Soil loss tolerance limits have not been established for individual upland soils because specific rates of soil formation from bedrock are not known. However, research has shown that the rate of soil formation from consolidated bedrock is in the range of 0.5 to 1.0 tons per acre per year. The following soil cover standards have been developed to prevent erosion rates from exceeding soil formation rates.

The soil is considered to be in acceptable condition after a land-disturbing activity when the effective soil cover on an activity area is (1) the minimum amount shown in the following table, or (2) the minimum amount prescribed for a specific site by a qualified earth science specialist after an on-site investigation. The minimum effective soil cover prescribed for a specific site will vary from the values shown in the table due to local differences in slope, microrelief, surface rock fragments, detachability, and other factors that vary within soil types.

Effective soil cover as defined in the following paragraph is not the same as effective ground cover defined for streamside management zones in Appendix F. The function of effective ground cover is to trap sediment that has been mobilized and moved off-site, and thereby keep it from entering a stream; the function of effective soil cover is to prevent the detachment and mobilization of soil particles, keeping the soil on-site.

Effective soil cover includes all materials that will dissipate the energy of falling raindrops. Included are plant litter and forest duff (which can be intact, displaced, or disturbed), woody material in contact with the soil, living vegetation (see Appendix H of the EIS for definition of living vegetation), and rock fragments with a diameter of 1/2 to 3 inches. Woody material and forest duff described under the guideline for soil organic matter both contribute to effective soil cover. The intent is for the effective soil cover to be evenly distributed across the activity area.

When less than 85 percent of an activity area is in an acceptable soil condition as defined above, restoration treatments will be implemented to bring effective soil cover levels up to the minimum standard. Restoration treatments will be completed prior to any seasonal period of precipitation or runoff. Treatment may include, but is not limited to, mulching with straw or woodchips, scattering concentrations of slash, or seeding grasses or forbs.

MINIMUM EFFECTIVE SOIL COVER (PERCENT) BY SLOPE GROUP AND SOIL GROUP

Slope (percent)	< 35	35 to 50	>50
Soil Group A.	70	80	90
Soil Group B.	50	60	75
Soil Group C.	40	50	65
Soil Group D.	30	40	55

Soil Group A: These soils are highly erodible, have developed from granitic parent material, have a short timber rotation length, and are at lower elevations on the westside of the Forest. Included are the Hoda, Holland, Hotaw, and Musick series.

Soil Group B: These soils have developed from a variety of parent materials. Their erodibility, geographic location, and climate varies, and they have short to moderate timber rotation lengths. Included are the Alken, Boomer, Boomer Variant, Chaix, Cohasset, Dellaker, Dubakella, Euer, Euer Variant, Forbes, Fugawee, Horseshoe, Hotaw Variant, Huysink, Jocal, Jocal Variant, Jorge, Kinkel Variant, Lorack Variant, Mariposa, McCarthy, Ponto Variant, Putt, Sattley, Sierraville, Sites, and Trojan series.

Soil Group C: These soils have developed from a variety of parent materials. Their erodibility, geographic location, and climate varies, and they have moderate to long timber rotation lengths. Included are the Aspen Variant, Bucking Variant, Chaix Variant, Crozier, Haypress, Hurlbut, Jorge Variant, Kyburz, Ledford, Ledford Variant, Neer, Smokey, Tahoma Variant, Tallac, Tinker, and Zeibright series.

Soil Group D: These soils occur primarily in the true fir zone, have low erodibilities, and have long timber rotations. Included are the Ahart, Bucking, Ceilo Variant, Lorack, Smokey Variant, Tahoma, Umpa, Waca, and Windy series.

Guideline for Soil Organic Matter.

1 Maintain Large Woody Material

The objective of this guideline is to maintain soil productivity and nutrient cycling by maintaining woody residues in timber harvest units while allowing the merchantable logs to be removed.

The goal is to maintain an average of at least 5 logs per acre in an activity area. Up to 20 logs per acre may be left if there are no other resource conflicts. Preference is for large cull logs 20 inches or more in diameter and more than 40 cubic feet in volume. Where possible, logs should be evenly distributed throughout the activity area and in contact with the soil. Logs should be in a range of decomposition classes (defined in USDA Handbook 553, page 80), except that at least two logs per acre should be in class 1 or 2. A total volume of 200 to 800 cubic feet of smaller logs, merchantable wood, or other woody material may be substituted when sufficient large logs are not available. Hardwood residues, which have a much shorter residence time, should be considered for retention when conifer residues are absent or in short supply.

The activity area for the large woody material guideline does not include roadsides and ridges designated for fuel reduction in Practice P1.

Large woody material is considered part of effective soil cover under the Standard for Soil Cover.

2 Maintain Forest Duff

Forest duff helps maintain long-term soil productivity by: (1) providing a source of organic matter and nutrients, (2) providing habitat for soil microorganisms, and (3) providing a mulch that conserves soil moisture.

The goal is to maintain a minimum of 20 percent of the undisturbed forest duff evenly distributed throughout the activity area. Undisturbed duff is duff that has not been displaced or moved, its natural structure is intact, including the well-decomposed layer at the interface with mineral soil, the thickness of its well-decomposed layer has not been reduced, and its surface may be charred by fire, but not consumed.

Undisturbed forest duff has the capacity to absorb soil being displaced and transported by sheet erosion. Undisturbed forest duff is also a source of organic matter, nutrients, and microbial habitat.

Forest duff is considered part of effective soil cover under the Standard for Soil Cover. Because of its special qualities, forest duff may be used to reduce the requirements of the soil cover standard as follows:

Where more than 20 percent of undisturbed forest duff is maintained, the effective soil cover required under the soil cover standard may be reduced by 5 percent for each 10 percent of undisturbed duff over 20 percent. This applies only to Soil Groups B, C, and O in the Standard for Soil Cover.

56. Soils/Watershed/Geology Support

Provide soils, watershed, and geology input in support of other resource activities. This involves various EA's and planning efforts such as timber sales, recreation site developments, reforestation planning, range planning and improvement, material source development, groundwater development hydroelectric projects, mining explorations and operations, sale preparation and administration, and wildlife habitat improvement projects. Also, develop and administer plans for soil, water, and geologic resource projects (e.g., for special studies, demonstration soil areas, municipal watersheds, groundwater and aggregate sources, and river basin studies). Includes soils and water resource inventories, soils and water resource monitoring, geologic resources and hazards inventory, and water uses management (administration of water uses and water uses inventory). The units of measure are reports and cases.

57. Air Quality

Follow the State of California Agricultural Burning Guidelines and requirements of the Clean Air Act, as amended. Coordinate with the Placer County Air Pollution Control Board, Sacramento Valley and Northern Sierra Air Quality Management Districts.

Work with previously developed Air Quality District's guidelines or assist in the development of new guidelines which will facilitate implementation of management programs on the Tahoe National Forest.

Techniques to reduce emissions from prescribed fires will include increased utilization of large, woody fuels (3'+), yarding of smaller pieces from harvest units (gross yarding), and scheduling the burning of units under favorable weather windows that would lessen the impact to air quality.

58. Withdrawal Review

Review existing Forest Service withdrawals according to Public Law 94-579 to determine if each withdrawal should be continued and for how long.

59. Unstable Areas

Avoid unstable areas or provide special treatment to avoid triggering mass movement.

Allow no land-disturbing activities on land classed as extremely unstable, unless a geotechnical investigation determines certain activities are appropriate.

60. Property Boundary - Location and Marking

Locate and establish the boundaries of lands and property rights administered by the TNF to a level necessary to protect the resource and minimize conflict with adjacent owners. Maintain land title and survey records necessary to establish boundaries, maintain property lines, etc. Units of measure are entries, miles, and corners.

61. Coordination with Other Ownerships and Agencies - Coordinated Resource Management Planning

Coordinate with other *major* landowners and agencies in programs *and/or* investments including, but **not** limited to, natural resources, energy and mineral resources, *livestock* production, watershed, wildlife habitat, wood production, and recreation *Specific* resource plans may also include plantatton protection, integrated pest management, timber stand improvement, land line location, fuels treatment, and roads *Units* of measure are plans, agreements, and person*years*

Provide for use of National Forest System Lands for training purposes in accordance with the Master Agreement between the Departments of Defense and Agriculture

62. Easement Acquisition

Acquire easements on adjacent lands when necessary to meet National Forest resource *objectives*
Units of measure are cases, agreements, and supplements

63. Special-Use Management - Non-Recreation

Process applications and administer *non-recreation special* uses such as Isolated residences, *utility* corridors, and electronic sites In a timely manner Provide for the protection of resources to meet management *objectives* for the area Unit of measure is cases.

64. R/W Grants - Roads and Trails

Process applications and administer road and trail *R/W* permits, easements, and licenses In a timely manner. Provide for the protection of resources to meet management objectives for this area Unit of measure is number of rights-of-way.

65. Power-Related Licenses/FERC

Process *applications* and administer licenses and special-use permits for power-related activities such as dams, *reservoirs*, and transmission lines in a timely manner Provide for the protection of resources to meet management objectives for the area Units of measure are applications, licenses, and permits

66. Electronic Sites

Authorize the placement of electronic *transmitting* and *receiving* communication equipment only at designated electronic sites with approved *site* plans. Existing designated electronic sites are in the following management areas 002 (da), 015 Harding, 026 Galloway, 029 Pass, 030 Ruby, 055 Boreal Ridge, 077 Cisco Butte, 078 Blue, 088 Squaw Peak, and 093 Ward, and 032 Stampede-Boca

Consider *authorizing* additional sites only where there is a need for *trans-Sierra* omnidirection Communication links that *serve* the public interest Where reasonable *alternatives* for locating these facilities at existing designated sites or *sites* on private land do not exist, and where there would be no significant conflict with other National Forest users, authoruation will also be considered

Exempt from the above *direction* are electronic *transmitting* facilities used for monitoring purposes, *base* station communication radios for special-use permit holders, and Forest *Service* installations

These facilities will be considered on a *case-by-case* basis and will be authorized when monitoring is needed for public safety or is in the public interest

67. Unauthorized Activities - Facilities or Uses

Take prompt and continued action to identify and resolve all unauthorized occupancy and *use* of lands administered by the TNF Unit of measure is claims and cases

68. Transportation System Management

1. Restrict road, trail, and off-highway use to the extent necessary for protection of
 - a. Threatened, endangered, and sensitive plants or animals
 - b. Essential wildlife functions
 - c. Cultural resources
 - d. Riparian zones and wetlands
2. Eliminate motorized vehicle use in riparian areas and wetlands except on system roads and designated routes and stream crossings
3. Maintain the transportation system to a standard that is commensurate with user types and amount of use. Closure of roads and trails will be appropriate if the cost for maintenance and resource protection exceeds the benefits received or the financial ability of the Forest to pay for these services
4. Seasonal road and trail restrictions are preferred over permanent closures
5. Before deciding to regulate by signing and public announcements as opposed to physical barriers, consider the risk to resource values and the magnitude of maintenance costs resulting from violations. If physical barriers are used, make sure that private land access needs or cooperative agreement requirements are met.
6. Regulating for single purpose use is not an acceptable objective if only enacted to meet one group's desire. A need to regulate because of user conflict will be evaluated on a case-by-case basis
7. Close roads and trails or regulate traffic when necessary to protect the safety of Forest users. Candidates for regulation or closure include roads with hazards such as avalanche, landslides, forest fires, flooding, timber operations, etc
8. Conduct a separate analysis to correlate land capability, user needs, and user or landowner conflicts Forestwide for all dispersed recreation travelways
9. Consider the need to protect administrative or special-use facilities when deciding whether to close certain roads. Lookouts, guard stations, and transmission sites are examples of such facilities
10. Consider the quality of dispersed recreation opportunities when deciding whether to close a road. It may be beneficial, for example, to separate four-wheeled motorized recreation use from other forms of motorized recreation, especially when simultaneous use diminishes the quality of the recreation experience for both users
11. Based on the results of a transportation analysis, close and obliterate roads that are not necessary for resource management, Private land uses, or public uses. Bring the roadbed into resource production.

Prevent potential resource damage by the obliterated road
12. Construct the minimum number of miles of road and meet the minimum design standards possible while still meeting safety, user, and resource needs with economic efficiency. Logging system design, timber sale design, and transportation planning must be emphasized on all timber sales to comply with this policy. No new roads will be constructed or reconstructed without an approved transportation plan and Environmental Assessment, or Environmental Impact Statement, if required
13. Proposals for subdivision access over existing National Forest System roads will be addressed as follows
 - a. Where County jurisdiction and maintenance would be appropriate, the County will be asked to accept a USDA easement and the maintenance responsibility for the access road

- b Where the access remains under Forest Service jurisdiction and public use is regulated, a letter indicating such restrictions will be provided to the county when requested for processing of subdivision approval. A road-use permit assigning maintenance responsibilities and required work will be issued to a property owners' association when actual road use is to occur.
 - c Where access remains under Forest Service jurisdiction and public use is not regulated, a letter to this effect will be provided to the County when ask for processing of subdivisions. The letter will ask the County to include the following clause on the parcel map: "Access is across National Forest System land administered under U.S. Department of Agriculture regulations. The Forest Service may at any time regulate use by imposing seasonal road closure or other restrictions."
14. When planning recreation development projects and resource management activities, coordinate with State and local road agencies to address potential traffic impacts and mitigation measures.
15. Cooperate with the State, other agencies, and user groups to identify, and where compatible with Forest Plan management objectives, develop segments of trail that would contribute to a Statewide trail system. A Statewide system would connect use areas and provide the opportunity for long-distance trail touring.

69. Facilities Maintenance and Development

1. Schedule maintenance for existing facilities based on the economics of replacement versus further maintenance expenditure. Condemn those facilities which are unsafe or obsolete and are not economically efficient to maintain or modify for other uses. Plan to remove or replace condemned facilities.
2. Conduct feasibility studies to determine needs for administrative site development. These feasibility studies will be based on Forest administrative and resource objectives.

The following sites and areas identified in the 1977 Forestwide site study require a feasibility analysis:

Wild Plum-Gold Lake Basin
 Graniteville Ridge
 Hall's Ranch
 Cal-Ida
 Indian Valley
 Sierraville Ranger Station
 Truckee Ranger District Office
 Henness-Pliocene Area
 Westville Work Center
 Foresthill Residential Trailer

Route Name	Highway Number	Length
Brandy City	121	4.51
Marysville Road	105	31.25 *
Graniteville Road	122	31.67 *
Gold Lake Highway	24	15.49
Henness Pass Road	125	7.23
Washington Road	123	6.11
Stampede-Smithneck	126	26.45 *
Ridge-Henness Pass	111	36.76 *
Soda Springs-Auburn	124	71.8 *
Fibreboard Road	178	143'

* See Planning File for work needed

71. Energy Management

Includes all activities involving energy consumption and conservation on the Tahoe National Forest. For additional direction, refer to the Forest Service Manual and supplements, particularly FSM 7180. Technological advances and objectives in energy management will be integrated into the guidelines as the RO provides direction. Particular components of the energy management guidelines are:

1. Emphasize efficient use of energy-generating and energy-consuming equipment. Consider energy conservation measures when energy consumption is an aspect of project development. These include, but are not limited to, wind power generation devices, solar energy equipment, and car pooling.
2. Encourage all existing and future special-use permittees to implement all forms of energy conservation appropriate to the location of their permit.
3. In heavily used public recreation areas, encourage the use of mass transportation to relieve congestion, ease parking problems, and reduce gasoline consumption.
4. Manage wind energy sites as follows.
 - a. issue permits for commercial wind farm sites by competitive bid in accord with the sequence established by the Forest Service. Require successful bidders to submit a development plan for Forest Service approval. Set minimum bids and include a schedule of completion in the development plan.
 - b. Complete an environmental analysis before final approval of any proposed wind energy development plan.
 - c. Wind farms will not be allowed in
 - (1) Granite Chief Wilderness
 - (2) RNA's.
 - (3) SIA's
 - (a) All Scenic.
 - (b) Others on a case-by-case basis via environmental analysis process.
 - (4) Onion Creek Experimental Forest, Sagehen Creek Experimental Station
 - (5) Class I & II cultural resources areas
 - (6) Critical or essential threatened and endangered species habitat.
 - (7) Existing (or proposed) Forest Service facilities and developed sites such as campgrounds, Ranger Stations, and USFS Snowlab.
 - (8) North Fork American Wild River
5. Retrofit all building and facilities for which energy surveys indicate a favorable SIR (Savings investment Ratio)

72. Integrated Pest Management

Use an integrated Pest Management (IPM) approach, which recognizes pest management as an integral part of timber and other resource management, to prevent and reduce unacceptable pest-related damage. Under IPM, a full range of pest management alternatives, including cultural, biological, chemical, and mechanical methods, is considered and analyzed on a site-specific, project-level basis. Using the environmental analysis process, consider the environmental effects, treatment efficacy, and costs of various treatment methods on a case-by-case basis. Develop monitoring and enforcement plans to implement these specific measures.

73. Cultural Integrated Pest Management Method

The cultural component of integrated pest management involves pest prevention and suppression designed to reduce losses to forest pests. This includes genetic manipulations, such as breeding for pest resistance, planting nonsusceptible host types, providing for species diversification, and using vigorous planting stock. As additional information about the ecology of major commercial forest and rangeland plant species becomes available, the use of cultural control methods will most likely be accelerated. Cultural techniques for forest insect and disease control and prevention are discussed in FSM 3412 and 3442. Other cultural practices for National Forest System lands are covered by FSM 2410 and 2240.

74. Mechanical Integrated Pest Management Method

Mechanical methods of pest control are important because they strongly influence the habitat availability of food, reproductive areas, and protective cover of potential forest pests or their natural enemies.

Examples of mechanical devices used include brush rakes, angle blades, tree and brush cutters and shredders, discs, and plows. The variety of attachments and specialized machines available make mechanical methods a versatile addition to integrated pest management in forestry. Recommendations for the use of this component of IPM may be found in FSM 3412, 2470, and 2245.

75. Manual Integrated Pest Management Method

Manual methods of pest control involve the use of chainsaws, axes, hoes, and similar equipment, as well as the hands, to prevent or reduce pest populations. Such techniques are often limited due to high treatment costs, lack of manpower, safety considerations, and lack of effectiveness, however, they are useful in certain instances (FSM 2470, 3440).

76. Fire Integrated Pest Management Method

Fire is a common natural disturbance which may be used in an integrated pest management program. Since fire is not very discriminating in its effects, however, it must be carefully prescribed. The major limitations to expanded use of fire are its lack of selectivity, the narrow range of fuel and weather conditions for safe use, and restrictions imposed by air quality standards. Recommendations for using prescribed burning to achieve resource management objectives are given in FSM 2245, 2476, 2496, and 5140.

77. Biological Integrated Pest Management Method

Biological control in the classical sense refers to the role that parasites, predators, and pathogens play in maintaining the absence of pest populations. In vegetation management, it includes the action of defoliators, borers, and seed eaters on undesired plants. Although biological control occurs naturally, it can be augmented through deliberate natural enemy manipulations such as parasite and predator releases and use of biological pesticides. The use of biological pesticides such as *Bacillus thuringiensis*, nucleopolyhedrosis viruses, and growth regulators is covered by the same criteria as conventional chemical pesticides (FSM 2150).

Biological control may also include carefully regulated grazing by domestic livestock to control vegetation (FSM 2230). Goats may be most effective on the brushlands, while cattle and sheep may be useful where the primary competitors are herbaceous species. Soil compaction, poor control, the long time needed for control, and damage to desirable species are major deterrents to widespread use of grazing as a biological control method.

78. Pesticide Integrated Pest Management Method

Use of pesticides is an integral part of integrated pest management (FSM 2240, 2253, 2470, 2632, 2650, 2700, 3400). All pesticides used must be in accordance with pesticide-use management and coordination policy (FSM 2150). This includes the use of conventional pesticides, as well as the more recently developed behavioral chemicals such as pheromones, attractants, repellents, confusants, and inhibitors.

79. Regulatory Integrated Pest Management Method

The regulatory component of integrated pest management is designed to prevent pest problems. It involves adhering to all the regulations that govern the movement of animals, plants, plant parts, and raw forest products such as logs, posts, poles, bark, chips, and Christmas trees. It also includes taking preventive measures to retard the spread of pest infestations. Although the Forest Service supports and often coordinates such programs with other Federal agencies (FSM 3404, 3411), it is not a regulatory agency.

These standards and guidelines are applicable to all National Forest System lands. The unit of measure for accountability is acres of IPM practices applied.

80. Fuels Management - Activity Fuels

Before implementing projects or activities that create fuel residues, conduct a fuels analysis and treatment plan through the interdisciplinary process.

Concentrate fuel treatment along roads and ridges. A significant amount of fuels will also be treated on areas away from roads and ridges as part of harvest contracts, fuelwood areas, site preparation, and other activities.

Treatment emphasis will be to reduce the 3P size class fuels to a level that meets both hazard reduction and other resource standards and guidelines or practices.

Treat fuels to the level needed to meet resource objectives under various fuel profiles and fire intensity levels at the 90th percentile level weather conditions.

Fire intensity level is a measure of difficulty to control a fire (based on rate of spread and heat output) expressed as a relationship to flame length.

The 90th percentile, or "average worst" weather conditions, will be used to represent the specific weather factors for planning purposes. This means that only 10 percent of the observed weather days for the past 10 years have had more severe fire weather than those used for determining fire intensity levels.

(1) Areas Outside of Roadside

Treat activity fuels where practical to limit fire to Fire Intensity Level 4 under 90th percentile weather conditions. Limit treatment to 40 acres or less in areas where a fuel analysis has shown that treatment is impractical and fuel levels would result in Fire Intensity Levels of 5 or higher.

(2) Roadside.

Create and maintain a fuel bed that will limit the fire intensity level (shown below) at the 90th percentile level weather conditions.

(a) Arterial/Collector Roads Not to exceed Fire Intensity Level 2 (2-4 foot flames), which would allow direct attack by hand crews.

(b) Local Roads Not to exceed Fire Intensity Level 3 (4-6 foot flames), which would allow safe attack with engines.

(c) Distance from road edge requiring the above designated fuel bed by slope is

Slope Percent	Distance from Road Edge (Ft.)	
	Below Road	Above Road
0-30	50	50
31-50	75-100	25-50
51+	100-150	25

Treat activity fuels generated by projects within roadside zones to meet the Fire Intensity Level objective.

(3) Ridges

When analysis of an area determines that a ridge is the logical location for fuel treatment, the minimum treatment will be to limit fire intensity to level 1 unless specific analysis indicates that Fire Intensity Level 2 is adequate. Width of treatment should meet the following minimum guidelines,

Slope Percent	Recommended Treatment Width (Ft.)
0-30	100
31-50	100-150
51+	150-200

(4) Develop specific project plans for areas that have extensive plantations. Consider protection requirements on adjacent private land

Specific areas are: Mountain House and Indian (Downieville RD), Volcano (Foresthill RD), Coldstream (Sierraville RD), Donner (Truckee RD).

In addition, develop specific project plans to determine acceptable fire intensity levels for areas with urban interface or areas that are considered to be of high value and/or risk

(5) Fuel treatment activities include prescribed fire, rearrangement, removal, or utilization. Utilize residues whenever practical

81. Fuels Management - Natural Fuels

Treat fuels through prescribed burning, rearrangement, utilization, or removal with utilization being the preferred method where practical. Most treatment of natural fuels will be in conjunction with range, wildlife habitat improvement, site preparation of the reforestation backlog, and fuel break construction

82. Law Enforcement

This activity includes but is not limited to detecting, preventing, and investigating violations of Federal laws and regulations on TNF lands, enforcement action by Forest Service personnel (when violations occur), patrols for compliance with laws and regulations, issuing, posting, and enforcing orders and closures; investigating alleged violations and potential claims; preparing documentation to resolve claims; and preparing for and appearing in court. Also includes cooperating with Federal, State, and local law enforcement agencies and providing information to the public about laws that affect them on TNF lands

83. Fire Prevention

Conduct fire prevention activities to keep human-caused fires below the 1972-81 annual average, which was 73 fires or 1.95 fires/100,000 visitor days. Emphasize the prevention of large, damaging, human-caused fires in high hazard areas on days of high, very high, and extreme fire weather

Each year, the Forest and each Ranger District will submit a plan for a prevention program that meets or exceeds the above objectives.

84. Fire Suppression

Fire suppression strategy is control (with fast, aggressive initial attack) except where the contain strategy is authorized for specific management areas at fire intensity levels described under the practice description. Strength of attack will be based on hazard rating, fire weather, and values at risk.

Due to intermingled private lands, high resource values, and/or continuous fuels, the confine suppression Strategy is not an appropriate suppression action at this time and will not be utilized unless the following occurs

1. Through analysis it is determined that resource and management objectives can be met through the use of the confine suppression strategy, and
2. Guidelines for the use of this suppression strategy are developed and approved for specific areas; and
3. Where necessary agreements with private landowners are executed to allow the confine strategy to be used on private lands

Any restrictions on the use of suppression tools such as tractors, air tankers, etc., are identified in the practice descriptions.

MANAGEMENT PRACTICES (YELLOW PAGES)

This section describes the management practices that will be used to translate Forest goals and objectives into results. A management **practice** is defined in 36 CFR section 219.3 as a 'specific action, measure, or treatment.' Unlike Forest Standards and Guidelines which apply forestwide, practices are area-specific standards and guidelines. A management prescription is a combination of compatible management practices used in conjunction with management area standards and guidelines to support a specific management emphasis.

Table V.3 alpha-numerically lists the practices by RPA code, number, and title.

TABLE V.3 - LIST OF TAHOE NATIONAL FOREST PRACTICES

CODE	TITLE
<p>A 1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18</p>	<p>Recreation Nordic Cross-Country Skiing Wild River Dispersed Recreation Commercial Nordic Cross-country Skiing Open OHV Restricted OHV Closed OHV Mountain Bike Use Developed Recreation and Interpretive Service Sites Management, Public Sector Recreation Management (Private and Other Public Sector) Downhill Skiing Recreation or IS Site Construction or Rehabilitation Downhill Skiing Planning, EIS/EA, Development Development or Rehabilitation of Private and Other Public Recreation Facilities Wild and Scenic Rivers Study (S&P) Special Interest Area Investigations and Management Research Natural Areas Visual Resource Improvement Visual Resource Travel Routes Viewshed Planning</p>
<p>B1</p>	<p>Wilderness Wilderness Area Management</p>
<p>C1 C2 C3 C4 C5 C6 C7 C8 C9</p>	<p>Wildlife and Fish Stream Fisheries - Nonstructural Improvement and Maintenance Stream Fisheries - Structural Improvement and Maintenance Lake Fisheries - Nonstructural Improvement and Maintenance Lake Fisheries - Structural Improvement and Maintenance Early Succession Vegetation Management Midsuccession Vegetation Management Late Seral Stage Vegetation Management Structural Habitat Improvement and Maintenance Wet Meadow Habitat Improvement and Maintenance</p>

TABLE v.3 - (continued)

CODE	TITLE
<p>D1 D2 D3 D4 D5 D6 D7 D8 D9</p>	<p>Range Range Management - Permanent Range Type (Intensive Management) Range Management - Permanent Range Type (Extensive Management) Range Management - Permanent Range Type (Some Livestock) Range Management - Transitory Range Type (Intensive Management) Range Management - Transitory Range Type (Extensive Management) Range Management - Transitory Range Type (Some Livestock) Range Improvement - Nonstructural (Permanent and Transitory Range Types) Range Improvement - Structural (Permanent and Transitory Range Types) Range/Scattered Eastside Pine Evaluation</p>
<p>E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14</p>	<p>Timber Clearcut Cutting Method Seed Step Cutting Method Overstory Removal Cutting Method Intermediate Cutting - Existing Stands Commercial Thinning - Regenerated Stands Seed Tree Cutting Method Special Cutting Uneven-Age Cutting Method Special Cutting - Urban/Rural/Wildland Interface Artificial Stand Reestablishment Natural Stand Reestablishment Tree Improvement Release and Weeding Precommercial Thinning</p>
<p>F1 F2 F3 F4</p>	<p>Water, Soil, and Air Water Resource Improvement Water Yield Improvement Flow Timing Improvement Soils Resource Improvement</p>
<p>G1 G2 G3 G4 G5 G6</p>	<p>Minerals and Geology Minerals Management - Locatables Minerals Management - Locatable Withdrawals Minerals Management - Leasables Minerals Management - Leasable Withdrawals Minerals Management - Saleables Mineral Material Development</p>
<p>J1 J2 J3</p>	<p>Lands Land Adjustments - Retain and Acquire Land Adjustments - Limited Land Adjustments - Potential Exchange</p>

TABLE V.3 - (continued)

CODE	TITLE
<p>L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12 L13 L14</p>	<p>Facilities Timber Access Road Development - Road Construction/Reconstruction Multi-Resource Road Access Development - Road Construction/ Reconstruction Trail Construction/Reconstruction - Foot Traffic Only Trail Construction/Reconstruction - Foot and Equestrian Traffic Only Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike Trail Construction/Reconstruction - Special Requirements FA&O Construction/Reconstruction Transportation Management, Roads - Open Transportation Management, Roads - Regulated Use Transportation Management, Roads - Closed Transportation Management, Roads - Obliterated Transportation Management, Trails - Open Transportation Management, Trails - Restricted <i>Use</i> Pacific Crest National Scenic Trail Management</p>
<p>P1 P2 P3 P4 P5 P6</p>	<p>Protection Fire Protection - Continuous Fuels Fire Protection - High Country Non-Continuous Fuels Fire Protection - Improvements Fire Protection - Research Natural Areas Fire Protection - Visual, High Use, Reservoirs, Improvements Fire Protection - Wilderness, Wild River</p>

CODE PRACTICE DESCRIPTION

A1 Nordic Cross-Country Skiing

Encourage nordic skiing outside of developed sites. Facility support may include developed parking that is kept clear of snow, trail signs, and overnight or emergency shelters. Trails are not provided as part of a commercial venture.

Activity Units-Managed Acres

Output Units-RV Days

Will occur in the snow belt above 5000 feet in elevation. Most Nordic skiing will occur within 5 miles of an all-weather road that is cleared of snow during the winter.

A2 Wild River Dispersed Recreation

Manage dispersed recreation use inside classified wild river boundary.

Activity Units-Managed Acres

Output Units-RV Days

Will only occur within a classified Wild and Scenic River Area.

A3 Commercial Nordic Cross-Country Skiing

Permit cross-country skiing on machine-groomed tracks or skating lanes provided by commercial special-use permit holders. Facility support may include developed parking that is kept clear of snow, restrooms, ski rental equipment trail signs, and overnight or emergency shelters. Race activities are frequently associated with this practice.

Activity Units-Managed Acres

Output Units-RV Days

Will occur in the snowbelt above 5000 feet in elevation. Skiing areas are developed under special-use permit.

A4 Open OHV

Permit snow and land travel, except for system roads and trails where laws prohibit use.

Activity Units-Managed Acres

Output Units-RV Days

Will only occur on lands where OHV use is permitted without restriction.

A5 Restricted OHV

Restrict use to designated routes for summer or winter periods or both, or use restrict use by time or year.

Activity Units-Managed Acres

Output Units-W Days

Will only occur on lands where OHV use is allowed under various restrictions.

A6 Closed OHV

Prohibit all motor vehicle use. Management activities that involve vehicle use are permitted for essential resource protection such as fire control, insect and disease problems in timber stands and recreation impacts.

Activity Units-Managed Acres

Output Units-RV Days

Will only occur on lands closed to all types of vehicle use.

A7 Mountain Bike Use

Provide for bicycle recreation opportunities in areas of mountain bicycle use. Activities include trail signing, preparing information brochures, and constructing trails for bicycle use. Where resource damage or user conflicts occur, take management actions to resolve identified problems. Trail hardening, trail rehabilitation, permits, or closure of areas or trails are typical actions that can resolve problems of concentrated mountain bicycle use.

Activity Units • Managed acres

Output Units • RV days

Prohibit mountain bicycle use only where bicycle use is prohibited by policy or where major resource or user conflicts are occurring or are likely to occur.

A8 Developed Recreation and Interpretive Service Sites Management, Public Sector

Administer, operate, and maintain developed recreation and interpretive sites to meet the standards and management objectives for public service and use. Standards for public health, safety and comfort are established in FSM 2330 and various handbooks on design, maintenance, etc. Management objectives are based on site capacity, site protection needs, seasonal demands for public use, and desired levels of service to enhance visitor's experience and convenience.

Standard Management meets the established standards and management objectives.

Low Standard Management is at a level below established standards and management objectives.

Activity Units-PAOT Days

Output Units-RV Days

Will only occur on developed recreation and interpretive sites that are owned and operated by the Forest Service.

A9 Recreation Management (Private and Other Public Sector)

Refer to costs associated with administration of recreation-related permitted use of NFS lands. This includes permits granted to private permittees or other public (non-Forest Service) organizations under special-use permits or other written agreements. Includes both developed recreation sites and dispersed area permits.

Activity Units • PAOT Days or Permits

Output Units • RV Days

Will only occur on developed recreation sites that are on NFS lands but are operated by others under a special-use permit. Does not include developed downhill skiing.

A10 Downhill Skiing

Refers to downhill skiing occurring on a developed winter sports facility operated under special use permit

Activity Units-PAOT Days

Units-FV Days

Will only occur on sites on NFS land that are developed for downhill skiing and are operated under a special-use permit

A11 Recreation or IS Site Construction or Rehabilitation

- 1 Feasibility and Plans' Develop project plans and feasibility studies, prepare EA/EIS reports
- 2 Preconstruction Carry the development or rehabilitation plan from the site survey through the design of a final plan and contract preparation
3. Contract Administration Administer and inspect construction contracts.
- 4 Construction or Rehabilitation include all developed site facilities in the design when constructing or rehabilitating recreation or IS sites. The unit of work is the capacity of the completed site or additions to existing sites.

Recreation or IS site construction or rehabilitation can occur on existing recreation/IS sites operated by the Forest Service or on adjacent private lands that have been selected for potential recreation/IS development.

A12 Downhill Skiing Planning, EIS/EA, Development

1. Feasibility and Plans. Develop project plans and feasibility study; and prepare of EA/EIS documents in coordination with permittee.
- 2 Preconstruction Review development or rehabilitation plans from the site survey through the design of a final plan and contract preparation as proposed by a permittee.
- 3 Review and inspect permittee's construction and development of downhill ski facilities as documented in approved plans

Can only occur on those NFS lands that are approved for the expansion of an existing winter sports site or for the development of a new winter sports site. May occur in conjunction with the development of adjacent private lands

A13 Development or Rehabilitation of Private and Other Public Recreation Facilities

- 1 Feasibility and Plans. Develop project plans and feasibility study; prepare EA/EIS documents in coordination with permittee
- 2 Preconstruction: Review development or rehabilitation plans from site survey through the design of a final plan and contract preparation as proposed by a permittee.
- 3 Review and inspect the permittee's development or rehabilitation of recreation facilities provided for in approved plans

Can only occur on those NFS lands that are approved for the rehabilitation of existing permitted facilities or for the development of new facilities under special use permit. Excludes downhill skiing facilities

A14 Wild and Scenic Rivers Study (S&P)

Refers to congressional and administrative studies for Wild and Scenic Rivers Also includes S&P coordination by USDA of the State and private land impact assessment Unit of measure is miles of river studied Will only occur on those NFS lands directed to be studied for Wild and Scenic River purposes by Congress For LMP purposes, this will include any lands that are proposed for study

A15 Special Interest Area Investigations and Management

Examine, establish, and manage specially designated areas that possess geological (including paleontologic), botanical, scenic, zoological, cultural and other features that warrant protection through Special Interest Area classification according to 36 CFR 294.1(a) This includes National Natural Landmark designation Unit is acres

Occurs on those NFS lands where a significant special interest feature has been identified

A16 Research Natural Areas

Complete establishment reports and submit to Chief with recommendation for establishment for areas allocated as recommended Research Natural Areas

Investigate and evaluate candidate areas for which final selection has not been made. If screening results in selection for Research Natural Area purposes, prepare Establishment Report and submit to Chief for establishment

Established areas will be managed as Research Natural Areas In the interim, areas will be managed to protect Research Natural Area Values until designation action is completed or the area has been dropped from further consideration Unit is areas

Occurs on those National Forest System lands allocated as candidate or recommended Research Natural Areas and on those areas subsequently established as Research Natural Areas

A17 Visual Resource Improvement

Includes all activities necessary to improve or enhance the visual condition of altered landscapes The managed alterations are currently visible to a degree that clearly exceeds the standards established by the implemented Visual Quality Objectives Activities will return these landscapes to a more natural-looking state by reducing the visual contrast between the altered and adjacent natural landscapes Practices may include, but are not limited to regrading to natural contours, removing slash or unnatural debris, seeding, or planting

A18 Visual Resource Travel Routes Viewshed Planning

Involves detailed planning of areas managed for visual attractiveness as viewed from major travel routes (corridor) The practice is applicable to specific management areas identified in the Forest Plan

Identify the landscape character desired for the corridor and then inventory, plan, and prescribe the vegetation management activities needed to retain that character over time and space Choose activities that will maintain, rehabilitate, or enhance the visual quality of the landscape as viewed from the major travel routes

The plan should also consider objectives such as maintaining health and safety: creating and enhancing viewpoints, improving vegetation diversity, size, structure, and species composition, and providing for other compatible uses Until the travel route viewshed plan is completed, timber harvesting and other land-disturbing activities are limited to those necessary to maintain the health of the stands, reduce safety hazards, and other compatible permitted uses

The unit of measure is acres with completed viewshed plans

B1 Wilderness Area Management

Standard Management of the wilderness resource and its use is at a level that meets the established standards and management objectives developed in approved wilderness management plans. Plans are fully implemented.

Low Standard Management is at a level below established standards and management objectives stated in the wilderness plan. Wilderness areas without approved management plans will be considered as operating at reduced service management.

Activity Units-Managed Acres Output Units-RV Days

Will **only** occur within classified wilderness areas.

C1 Stream Fisheries - Nonstructural Improvement and Maintenance

Use nonstructural activities as needed to enhance cold water stream fisheries. Practices may include: spawning bed improvement, chemical treatment, human access control, regulation of fishing pressure, enhancement of riparian vegetation, and removal of migration barriers. Management indicator species (MIS) and emphasis species are listed in Appendix D.

Direction:

Where trout are featured: Retain or establish 80 percent crown closure of riparian vegetation. Develop in-stream cover where existing cover is less than 50 percent. Ensure that streambed sediment remains below 25 percent. Develop pools if the percentage of pools is less than 35. Install spawning gravel in riffles where the percentage of 0.4 to 2.3 inch gravel is less than 30. Maintain channel stability on 80 percent of the total linear distance that is classified as stable. Remove barriers that block migrations to spawning sites.

C2 Stream Fisheries - Structural Improvement and Maintenance

Establish or maintain structural improvements for cold-water fisheries. Practices may include activities such as: streamside fencing, in-stream cover development (logs and rocks), channel stabilization, spawning facility construction, fish way and fish screen construction, bank stabilization, removal or relocation of roads too close to streams but outside of the streamside management zone (SMZ), control of water level fluctuations, construction of water bars and culverts outside the SMZ to retard or direct water runoff, and riffle and pool establishment. Featured species are the same as for C1.

Direction:

Where trout are featured: Retain or establish 80 percent crown closure of riparian vegetation. Develop in-stream cover where existing cover is less than 50 percent. Ensure that streambed sediment remains below 25 percent. Develop pools if the percentage of pools is less than 35. Install spawning gravel in riffles where the percentage of 0.4 to 2.3 inch gravel is less than 30. Maintain channel stability on 80 percent of the total linear distance being classed as stable. Remove barriers that block migration to spawning sites.

C3 Lake Fisheries - Nonstructural Improvement and Maintenance

Maintain or enhance lake fisheries. Practices may include activities such as: fish population control, human access control, vegetation planting, shoreline stabilization, removal of migration barriers, aquatic plant control, and fertilization. Management indicator species (MIS) and emphasis species are listed in Appendix D.

Direction:

Monitor nongame fish and aquatic vegetation populations and initiate control activities when their populations reach levels that will interfere with game fish production.

C4 Lake Fisheries - Structural Improvement and Maintenance

Establish or maintain structural lake improvements. Practices may include activities such as: construction of fish shelters, establishment of spawning beds, shoreline stabilization, and water control structures. Management indicator species (MIS) and emphasis species are listed in Appendix D.

Direction:

Survey lakes for existing cover. Construct cover where needed to enhance habitat.

C5 Early Succession Vegetation Management

Produce or maintain early successional vegetation stages in forests and chaparral. Practices may include activities such as livestock grazing, precommercial thinning, plantation release, prescribed burning, mechanical crushing, pruning, and herbicide application.

Direction.

Bear - Where bears are an MIS. Manage brush fields for fruit and berry production. Provide the composition and seral stage of preferred vegetation that will meet dietary needs. Manzanita is particularly important. Where possible, provide or maintain at least 10 downed logs per acre larger than 20 inches in diameter.

Mountain Quail - Where quail are an MIS. Provide forest openings (1/2 - 1 acre) that provide soft mast. Break up large, continuous brush fields. Provide water sources where needed. Locate regeneration areas adjacent to managed openings to provide escape cover.

Turkey - Where turkeys are an MIS. Establish or retain forest openings at least 1 acre in size. Provide grass and shrub cover in the openings. Openings should be no more than 1 mile from a water source. Retain large trees for roosting adjacent to openings or water sources.

Blue Grouse - Where grouse are an MIS. Provide forest openings, particularly in red fir, that produce a variety of berry-producing shrubs. Thimbleberry and serviceberry are preferred. Thin brush and shrubs when 100 percent ground cover occurs. Provide downed logs in the clearings. The openings should be located no more than 1 mile from a water source.

C6 Midsuccession Vegetation Management

Produce or maintain midsuccessional stages of forests and chaparral. Practices may include activities such as intermediate timber treatments, prescribed burning, livestock grazing, wildlife stand improvement.

Direction.

Bear - Where bears are an MIS. Manage brush fields for fruit and berry production. Provide the composition and seral stage of preferred vegetation that will meet dietary needs. Manzanita is particularly important. Where possible, provide or maintain at least 10 downed logs per acre larger than 20 inches in diameter.

Blue Grouse - Where grouse are an MIS. Provide forest openings, particularly in red fir, that produce a variety of berry-producing shrubs. Thimbleberry and serviceberry are preferred. Thin brush and shrubs when 100 percent ground cover occurs. Provide downed logs in the clearings. The openings should be located no more than 1 mile from a water source.

Mountain Quail - Where quail are an MIS. Provide forest openings (1/2-1 acre) that provide soft mast. Break up large, continuous brush fields. Provide water sources where needed. Locate regeneration areas adjacent to managed openings to provide escape cover.

Turkey - Where turkeys are an MIS. Establish or retain forest openings at least 1 acre in size. Provide grass and shrub cover in the openings. Openings should be no more than 1 mile from a water source. Retain large trees for roosting adjacent to openings or water sources.

C7 Late Seral Stage Vegetation Management

Maintain forest lands in a mature and overmature condition. Practices may include activities such as silvicultural treatments that maintain desired levels of canopy closure and structure, human access control, and uneven-aged timber management.

Direction.

Pileated Woodpecker - Where pileateds are an emphasis species. Provide blocks of mature forest habitat. Concentrate management in streamside zones, sensitive soils, visual zones, and designated wilderness. Retain all nonhazardous snags greater than 21 inches DBH in these areas.

Osprey - Where ospreys are an emphasis species. Retain all broken-top live trees within 1 mile of water. Restrict access and disturbance during breeding season. Where possible, construct artificial nest structures.

C8 Structural Habitat Improvement

Improve habitat capability through structural improvements not covered in stream and lake or wetland habitat improvements. Practices may include activities such as placement of nest structures, den development, water development (guzzlers and watering ponds), protective fencing, and brush pile establishment and snag establishment or retention.

C9 Wet Meadow Habitat Improvement and Maintenance

Intensively manage, maintain, or improve habitat (10 acres or more) for wetlands species. Practices may include activities such as construction of potholes or shallow marshes, development of forage and cover, construction of nest boxes, islands, mounds, and human access control. MIS species include Canada geese, mallards, and wood ducks.

Direction

Canada Geese - Where featured, construct nesting islands where feasible and supplement islands with nesting platforms.

Mallards - Where featured, blast potholes in rank vegetation and establish food plants in open water areas lacking food supply.

Wood Ducks - Where featured, construct and place wood duck nesting boxes in areas lacking natural nesting places.

D1 Range Management - Permanent Range Type (intensive Management)

Intensively manage existing range permits, with the intent to increase forage production by considering all available technology for range and livestock management. Cooperate with permittees, monitor range use, and maintain existing range improvements (replacement of range improvements will be made on a 20-year schedule). Emphasize development of structural and non-structural improvements. Prepare range allotment plans or other plans involving the management of the range resource on a 10-year schedule. Maintain existing range agreements with other agencies or landowners. Unit of measure is number of plans and permitted animal unit months.

D2 Range Management - Permanent Range Type (Extensive Management)

Extensively manage existing range permits where management systems and techniques, including fencing and water developments, are applied as needed to obtain relatively uniform livestock distribution and plant use, maintaining plant vigor. No attempt is made to maximize livestock forage production by cultural practices such as seeding. Cooperate with range permittees, monitor range use, and maintain existing range improvements (replacement of range improvements will be made on a 20-year schedule). Develop structural improvements only for protection and enhancement of forage production, do not develop nonstructural improvements.

Prepare range allotment plans or other plans to manage the range resource on a 10-year schedule. Maintain existing range agreements with other agencies or landowners. The unit of measure is number of plans and permitted animal unit months.

D3 Range Management - Permanent Range Type (Some Livestock)

Maintain existing range permits where livestock use is within the apparent present capacity and 226, 227, 230 investments are made to attain livestock control. No attempt is made to achieve livestock distribution.

Cooperate with range permittees, monitor range use, and maintain existing range improvements. Prepare range allotment plans or other plans involving the management of the range resource on a 10-year schedule. Maintain existing range agreements with other agencies or landowners. The unit of measure is number of plans and permitted animal unit months.

D4 Range Management - Transitory Range Type (intensive Management)

Intensively manage existing range permits in coordination with timber management practices to allow livestock to utilize forage within established plantations, generally within 3 to 5 years after planting. The intent of this management strategy is to increase forage production by considering all available technology for range and livestock management.

Cooperate with range permittees, monitor range use, and maintain existing range improvements (replacement of range improvements will be made on a 20-year schedule). Emphasize development of structural and non-structural improvements. Prepare range allotment plans or other plans involving the management of the range resource on a 10-year schedule. Maintain existing range agreements with other agencies or landowners. The unit of measure is number of plans and permitted animal unit months.

D5 Range Management - Transitory Range Type (Extensive Management)

Extensively manage existing range permits in coordination with timber management practices to allow livestock to utilize forage within established plantations, generally within 3 to 5 years after planting. Apply management systems and techniques, including fencing and water developments, as needed to obtain relatively uniform livestock distribution and plant use, while maintaining plant vigor. No attempt is made to maximize livestock forage production by cultural practices such as seeding.

Cooperate with range permittees, monitor range use, and maintain range improvements (replacement of range improvements will be made on a 20-year schedule). Develop structural improvements only for protection and enhancement of forage production, do not develop nonstructural improvements. Prepare range allotment plans or other plans involving the management of the range resource on a 10-year schedule. Maintain existing range agreements with other agencies or landowners. The unit of measure is number of plans and permitted animal unit months.

D6 Range Management - Transitory Range Type (Some Livestock)

Maintain existing range permits in coordination with timber management practices to allow livestock to utilize forage within established plantations, generally within 3 to 5 years after planting.

Livestock use is within the apparent present capacity and investments are made to attain livestock control. No attempt is made to achieve livestock distribution.

Cooperate with range permittees, monitor range use, and maintain existing range improvements. Prepare range allotment plans or other plans involving the management of the range resource on a 10-year schedule. Maintain existing range agreements with other agencies or landowners. The unit of measure is number of plans and permitted animal unit months.

D7 Range Improvement - Nonstructural (Permanent and Transitory Range Types)

Use prescribed fire and mechanical practices to control timber/shrub encroachment. Practices include nonstructural improvements to increase AUM's, such as seeding, herbicides, and fertilization. The unit of measure is acres.

D8 Range Improvement - Structural (Permanent and Transitory Range Types)

Construct new structural improvements (e.g., fences, water developments) to increase AUM's and improve the distribution of livestock. Cost of construction resulting in increased AUM's will be apportioned between the Forest Service and permittee. The unit of measure is structures.

D9 Range/Scattered Eastside Pine Evaluation

On an individual project basis, evaluate the site potential of open stocked eastside pine stands (less than 20 percent crown closure) to produce timber, fuelwood, forage or a mixture of wood and forage outputs.

E1 Clearcut Cutting Method

Remove all merchantable commercial trees in a stand. The objective of this method is to establish a new, fully stocked stand. Some ways to accomplish this full stocking on clearcut areas include saving advanced regeneration with a basal area weighted mean age of less than 50, planting, direct seeding, or natural regeneration. This method includes all types of clearcuts: stand, patch, and strip. Minimum stand size is 5 acres with maximums as described in 36 CFR 219.27.

This cutting method is applicable to mixed conifer, eastside pine, red fir, lodgepole pine, and hardwood-conifer forest types. The unit of measure for timber offered for sale is MBF. The unit of measure for accountability is acres clearcut.

E2 Seed Step Cutting Method

Open the canopy in a single operation during timber harvest, thus creating enough vacant space to allow regeneration of the desired species. The stand is usually regenerated naturally. Artificial regeneration is required if the stand has not naturally regenerated within 4 years of harvesting. Minimum stand size is 5 acres with maximums as described in 36 CFR 219.27.

This cutting method is applicable for all forest types with a sufficient number of windfirm, seed-producing, and relatively defect-free seed trees. The unit of measure for timber offered is MBF. The unit of measure for accountability is acres harvested.

E3 Overstory Removal Cutting Method

Harvest timber stands after the successful completion of the shelterwood seed step or the seed tree systems by removing all merchantable stems in one or more operations. The objective of this cut is to remove the overstory trees as soon as possible after the new crop satisfactorily occupies the vacant spaces created by the seed step and seed tree systems. Minimum stand size is 5 acres with maximums as described in 36 CFR 219.27.

This cutting method applies to all forest types that have been previously entered with a seed step shelterwood or seed tree cut. It does not apply to other existing stands. The unit of measure for timber offered is MBF. The unit of measure for accountability is acres harvested.

E4 Intermediate Cutting - Existing Stands

Maintain or improve stand growth by thinning or removing trees likely to die within 10 years (sanitation) or before stand is scheduled for regeneration. Minimum stand size is 5 acres. No maximum stand size exists except for prescription purposes.

This cutting method applies to existing wild stands on all forest types. It does not apply to existing plantations. The unit of measure for timber offered is MBF. The unit of measure for accountability is acres.

E5 Commercial Thinning - Regenerated Stands

Harvest stands that are less than rotation age and that have been previously regenerated by timber management activities in order to achieve stocking control, increase total yields of useful material from the stand, and achieve identified objectives for other resources. Thinning prescriptions must, at a minimum, consider the following: Forest-level growth and yield goals, age and condition of leave trees, insects, pathogens, wind patterns, residual fuel, potential logging damage to leave trees, and economic viability. Minimum stand size is 5 acres. There is no maximum stand size except for prescription purposes.

This cutting method applies to regenerated stands of all forest types. The unit of measure for timber offered is MBF. The unit of measure for accountability is acres.

E6 Seed Tree Cutting Method

Harvest all merchantable commercial timber in a stand except for selected high quality trees left for natural seed production. Reforestation is normally a combination of planting and natural seeding. Removal of seed trees after reforestation depends on factors such as economics, stand release requirements, the need for replacement snags and/or other resource objectives. Minimum stand size is 5 acres with maximums as described in 36 CFR 219.27.

This cutting method may be applied to all forest types with a sufficient number of windfirm, seed-producing, and relatively defect-free seed trees. The unit of measure for timber offered is MBF. The unit for accountability is acres harvested.

E7 Special Cutting

Harvest timber to meet identified objectives for other resources or activities such as visual quality, sensitive plants, wildlife habitat, streamside management, research and administrative studies, or special insect and disease conditions. Any even- or uneven-aged cutting method is permitted provided resource objectives are met and stand-specific silvicultural prescriptions are discussed in the appropriate environmental documents. Yields and management intensity are generally low. Stand size is unlimited except per 36 CFR 219.27.

Special Cutting applies to all forest types, where timber yields are incidental compared to other resource objectives. The unit of measure for timber offered is MBF. The unit of measure for accountability is acres.

E8 Uneven-Age Cutting Method

Harvest timber to produce near continuous forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of age or diameter classes to provide a sustained yield of forest products. Harvest trees singly or in groups of less than 2 acres with the objective of obtaining a size class distribution that approximates an inverted "J" shape curve on an area of forest land greater than 1,000 acres (planning compartment). Each harvest entry usually includes cuts designed to obtain regeneration, to thin the residual stocking, and to improve stand conditions.

High to moderate timber yields are expected over time. This practice's primary objective is to regulate timber yields by developing a balanced size or age class distribution. This type of cutting can be applied to tractor-loggable ground of all forest types. The unit of measure for timber offered is MBF. The unit of measure for accountability is acres.

E9 Special Cutting - Urban/Rural/Wildland interface

Harvest timber stands to retain visually important features like dominant individual trees, immature trees, and other vegetation while harvesting commercial trees. Residual trees may be either advanced regeneration composed of future crop trees or larger healthy mature trees that may be removed after the regeneration provides visual screening. In many cases it will be acceptable to treat the stands as a shelterwood and leave the remaining shelter trees until the end of the following rotation. All even-age and uneven-age cutting methods are permitted. Harvesting and post-sale activities may lower the visual quality for several years but this practice attempts to minimize that effect in the Urban/Rural/Wildland interface situations. Stand size limitations are those established for the respective cutting method.

This special cutting practice can be applied to all forest types when the Urban/Rural/Wildland interface is determined to exist. The unit of measure for timber offered is MBF. The unit of measure for accountability is acres.

E10 Artificial Stand Reestablishment

Reestablish stands deforested by any cause with desirable tree species by artificial methods. Minimum standards for reestablishment are contained in the Regional and Forestwide Standards and Guidelines. Activities included in this practice are: preparing of the seed bed or planting site; planting seedlings or direct seeding; animal control when necessary; weeding or releasing desired species from competing vegetation; implementing Integrated Pest Management; and examining, evaluating, certifying, and monitoring stands to achieve the reestablishment objectives.

This practice can be applied to all stands that are scheduled for regeneration, have been identified as reforestation backlog, and have been deforested for any other reason. The unit of measure is dollars per acre for all activities necessary to reestablish the stand. The unit of measure for accountability is acres.

E11 Natural Stand Reestablishment

Reestablish stands deforested by any cause with desirable tree species primarily by natural seed fall from adjacent seed trees. Plant as needed to fill in areas where the natural seed fall does not successfully reforest the stand to the minimum standards and guidelines. Minimum standards for reestablishment are contained in the Regional and Forestwide Standards and Guidelines. Activities included in this practice are: preparing of the seed bed or planting site; planting seedlings or direct seeding if natural regeneration is not successful within 3 years; animal control when necessary; weeding or releasing desired species from competing vegetation; implementing Integrated Pest Management; and examining, evaluating, certifying, and monitoring stands to achieve the reestablishment objectives.

This practice is applicable to all stands regenerated by the Seed Step Shelterwood practice (E2), Special Cutting practice (E7), and Uneven-age Cutting Method practice (Ea).

E12 Tree Improvement

Develop, maintain, and manage tree improvement areas within the TNF. This includes: preparing sites for seed orchards, planting seed orchard trees or rootstock, grafting, controlling brush, grasses, and weeds, pollinating, collecting cones, irrigating, and other general maintenance. Activities scheduled for progeny test sites include site preparation, planting genetically superior trees, release and weeding, animal control, evaluating seedling development, implementing Integrated Pest Management, and constructing fences if necessary.

The practice also includes harvesting of trees when needed to meet the tree improvement program goals.

This practice can only be applied to those sites identified as seed orchards, progeny test sites, or buffer strips associated with those areas. The unit of measure is acres.

E13 Release and Weeding

Reduce the effect of competing vegetation on the growth and development of desired tree species. All methods such as mechanical removal, hand cutting, aerial or ground application of herbicides, implementing Integrated Pest Management, etc., are considered part of this practice.

This practice can be applied only to those areas identified in the release backlog. The unit of measure for economic analysis purposes is dollars/acre cost to complete the release and evaluation. The unit of measure for accountability is acres.

E14 Precommercial Thinning

Thin stands containing excess stocking to encourage the growth and development of potential crop trees. The excess trees do not have a commercial sawlog value because of inadequate tree size, species value, or access to available markets, but may have value as fuelwood or wood chips. Included in this practice are cleanings, precommercial thinning, hardwood release, and Integrated Pest Management.

This practice can be applied to stands of all forest types and on site classes with stocking projected as too high to meet Plan objectives for merchantability at a specified stand age. Stands that are within 10 years of merchantability would not be considered. The unit of measure for economic analysis purposes is dollars/acre cost to complete the thinning. The unit of measure for accountability is acres.

F1 Water Resource improvement

Implement activities to improve watershed conditions. These are usually major soil erosion and water quality problem areas that are on the ForestWIN Inventory. Includes erosion reduction; water flow improvement (e.g., reduced surface runoff); channel stabilization works; and sediment retention practices. This involves revegetation with grasses, trees, and shrubs, and associated treatments such as mulching, spreading straw and jute; and improvements such as check dams, settling basins, and water spreading structures. Involves developing water resource improvement plans, implementing restoration plans, and maintenance. The unit of measure is acres.

F2 Water Yield improvement

Implement activities to permanently increase water yield. Primarily involves vegetative manipulation such as converting deep-rooted brush species to shallow-rooted grasses. The unit of measure is acre-feet.

F3 Flow Timing Improvement

Implement activities to improve timing of runoff. Involves vegetative manipulation or structural improvements. Activities will occur in the predominantly snow zone, above about 5,000 feet, and will include strip cutting in mixed conifer, red fir, and lodgepole pine types. Structural improvement includes such structures as snow fences. The unit of measure is acres.

F4 Soil Resource improvement

Implement activities to improve the soil or maintain soil resource improvements. This includes such activities as reducing compaction, improving soil fertility, reducing effect of soil displacement, controlling erosion, and soil stabilization projects.

This practice can be applied to all lands identified as needing soil resource improvement, such as lands identified in the Soil Resource Inventory as altered, eroded or severely eroded, or terraced lands and areas included in the ForestWIN inventory. These lands within a proposed timber sale may be identified as an opportunity for improvement and included in the SIA plan. The unit of measure is acres.

G1 Minerals Management - Locatables

Administer surface resources in conjunction with the development of locatable mineral resources. Activities include analyzing and approving plans of operations and requirements for mined-area rehabilitation. Units of measure are claims, plans, and cases.

G2 Minerals Management - Locatable Withdrawals

Propose to USDI that areas be withdrawn from mineral entry where necessary to protect other resources. Units of measure are acres, stes, and cases.

G3 Minerals Management - Leasables

Administer surface resources in conjunction with the development of leasable mineral resources. Activities include analyzing and approving plans of operations and requirements for site rehabilitation on the merits of the individual projects. Units of measure are permits, leases, and plans.

G4 Minerals Management - Leasable Withdrawals

Propose to USDI that areas be withdrawn from mineral leasing where necessary to protect other resources. Units of measure are acres and cases.

G5 Minerals Management - Saleables

Administer saleable (common variety) mineral resources including permit requirements for mined area rehabilitation. Units of measure are permits, sites, and plans.

G6 Mineral Material Development

Manage mineral materials (common variety) which are economically and logistically located for Forest Service needs (i.e., road construction) in accordance with a site development and restoration plan. Reserve these minerals by withdrawing them from mineral entry. These sites will be located in management areas where mineral development will not conflict with other resource management. Sale of mineral materials can be provided for local government and community use where they do not conflict with other resource management and the material is not needed for National Forest System programs. Units of measure are acres and sites.

J1 Land Adjustments - Retain and Acquire

Retain NFS lands and acquire other lands to meet management objectives. Adjust lands administered by the TNF by exchanges and transfers. Activities include preparing land adjustment plans, environmental documents, appraisals, title processing, and negotiations. The acquisition portion of the land adjustment program is on lands which are not covered by these practices. Units of measure are acres, plans, and cases.

J2 Land Adjustments - Limited

Generally retain NFS lands in this management area. Acquire other lands which will complement the 'Resource Management Emphasis' direction for this area.

Consider exchanging NFS lands for other lands within the TNF to promote efficient National Forest management. Where intermingled landownership patterns exist, consider consolidating ownership through land exchanges on a case-by-case basis when needed to:

- 1 Promote more efficient management of NFS land
- 2 Reduce conflicts in use between NFS lands and adjacent ownerships
- 3 Reduce the need for additional investments such as right-of-way acquisitions, landline surveys, and trespass resolution
- 4 Support resource development
- 5 Provide for public use

Units of measure are acres, plans, and cases.

J3 Land Adjustments - Potential Exchange

NFS lands not essential to Management Area 'Resource Management Emphasis' direction may be exchanged for other lands within the Forest where such acquisition will help resolve user conflicts, increase management efficiency, and meet Forest Plan goals and objectives.

L1 Timber Access Road Development- Road Construction/Reconstruction

Plan and construct collector or local roads that are needed to access the timber resource by timber purchaser or public works contract. Construct the roads according to the specifications set forth in the timber sale contract. These roads will be located and constructed (reconstructed) expressly for the most economical timber management along with suitable measures to protect all resources. Unit of measure is miles.

L2 Multi-Resource Road Access Development- Road Construction/Reconstruction

Plan and construct arterial, collector, and local roads necessary to facilitate multi-resource development and protection. These roads will be located and constructed or reconstructed for economical resource management and safe general public use along with suitable measures employed to protect all resources. Unit of measure is miles.

L3 Trail Construction/Reconstruction - Foot Traffic Only

Construct or reconstruct trails to a standard necessary to carry foot traffic only. Unit of measure is miles.

L4 Trail Construction/Reconstruction - Foot and Equestrian Traffic Only

Construct or reconstruct trails to a standard necessary to carry foot and equestrian only. Unit of measure is miles.

L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike

Construct or reconstruct trails to a standard necessary to carry foot, equestrian, or trailbike traffic. Unit of measure is miles.

L6 Trail Construction/Reconstruction - Special Requirements

Construct or reconstruct trails to a standard necessary to carry traffic for specific special requirements. Examples of special requirements include trails for the disabled, botanical education trails, cross-country ski trails, and snowmobile trails. Unit of measure is miles.

L7 FA&O Construction/Reconstruction

Plan, design, inspect, and construct capital improvements to support fire, administrative, and other (FA&O) multi-functional activities. Include opportunities to conserve energy (retrofitting). Unit of measure is each improvement.

L8 Transportation Management, Roads - Open

Permit motorized access on all arterials, collectors, and local roads. Roads will be maintained at maintenance level III, IV, or V to provide access for all National Forest traffic, public service, and private commercial haul.

Use seasonal closures as needed to protect wildlife, soil, and watersheds and to reduce maintenance costs. Some roads which cannot be adequately maintained for motorized use may be restricted or closed to such use. Closed roads may be occasionally opened to permit managed access for public fuelwood gathering, etc. Unit of measure is miles.

L9 Transportation Management, Roads - Regulated Use

By Regional Forester or Forest Supervisor Order, regulate roads to prohibit use by certain vehicle classes or user groups. Regulate to protect resource values and users, control maintenance expenditure, and reduce user conflicts. Maintain roads at maintenance level II to provide access for Forest administrative traffic, for dispersed recreation traffic, and for any traffic regulated by special permit. Normally, regulated use applies to local roads and some collectors. Seasonal closures for wildlife or soil and watershed protection may be used. Some roads which cannot be adequately maintained for motorized use may be restricted or closed to such use. Closed roads may be occasionally opened to permit managed access for public fuelwood gathering, etc. Unit of measure is miles.

L10 Transportation Management, Roads - Closed

Close local roads to motorized access. Maintain roads at maintenance level I. Maintain roads well enough to preserve the initial investment. Keep roads available for land management activities by the Forest Service or permitted uses such as access to utilities for repair. Gates, earth-log mounds, barricades, or other barrier devices may be used to close roads. Unit of measure is miles.

L11 Transportation Management Roads - Obliterated

Return the road prism to resource production. In some cases, this means restoring the roadbed to original side slope. Unit of measure is miles.

L12 Transportation Management, Trails - Open

Open trails to intended use with no restrictions. Manage the type, volume, and season of trail use to achieve the desired trail management objectives. Elements of trail operation include monitoring the volume of use, the type of use, and the effects of use on the trail management objectives: implementing trail restrictions; and using guides and signs to inform users about the intended use for each trail.

L13 Transportation Management, Trails - Restricted Use

Place restrictions on trails when needed to achieve management objectives. An example of restricted use is the Pacific Crest Trail, which is closed to motor vehicles by law. Other restrictions would include seasonal restrictions of trail bikes and/or equestrian traffic to protect resources. Unit of measure is miles.

L14 Pacific Crest National Scenic Trail Management

The standards and guidelines for location, design, signing, user facilities, and management of the PCNST will be in accordance with the criteria established in the PCNST Comprehensive Plan, 1/18/82.

P1 Fire Protection - Continuous Fuels

- 1 Suppression Strategy
 - a Contain. Fire Intensity Level 1
 - b Control. Fire Intensity Levels 2-6.
- 2 Prevention

Emphasize fire prevention in developed areas (especially permanent occupancy), areas of concentrated recreation use, and during periods of significant activity such as timber harvesting, mining, prospecting, hunting, etc.

P2 Fire Protection - High Country Noncontinuous Fuels

1. Suppression Strategy

- a. Contain Fire Intensity Levels 1-2.
- b. Control Fire Intensity Levels 3-6

The contain suppression strategy may be approved and extended to Fire Intensity Levels 3-4 if all of the following conditions are met

- (1) The fire is in an isolated fuelbed of 5 acres or less; and
- (2) it is very unlikely that the fire can escape from this isolated area; and
- (3) no improvements are threatened; and
- (4) it is 1,000 feet or more from a lake or reservoir.

Tractors will not be used for fire suppression unless approved by the Forest Supervisor.

2. Prevention

Fire prevention will be low key in low hazard areas where natural fuel breaks such as lakes or rock outcrops occur. Since past records indicate that the primary human cause of fire is campfires, prevention efforts will be directed toward the recreationist.

3. Fuels Treatment

- a. Activity Fuels

Limit fuel treatment to activity fuels along traveled routes needed to protect developments and visual quality.

- b. Natural Fuels.

Treat natural fuels as needed to protect improvements and/or to meet wildlife habitat improvements

P3 Fire Protection - improvements

1. Suppression Strategy

Control Fire Intensity Levels 1-6.

This suppression strategy is to protect improvements

2. Prevention

Emphasize fire prevention to protect improvements from wildfire and to minimize the potential of an improvement fire spreading to the wildlands

3. Fuel Treatment

Treat fuels to protect improvements

P4 Fire Protection- Research Natural Areas

1 Suppression Strategy:

- a Contain Fire Intensity Level 1
- b Control Fire Intensity Levels 2-6

The contain suppression strategy may be approved and extended to Fire Intensity Level 2 if an analysis has shown that a fire at this intensity level does not threaten persons or property outside the area, or the uniqueness of the RNA

2 Prevention

Because of low use of this area during periods of high intensity fire potential, prevention within the RNA will be limited, however, prevention of human-caused fires in higher-use areas outside the RNA will be aggressive to prevent fires that would threaten the RNA

3 Fuels Treatment

a Inside RNA

Conduct all fuel treatment activities, including the use of planned prescribed fire, in accordance with the plan developed to manage and protect this area

b Outside (adjacent) to RNA'

Where activity and natural fuels create a threat of a damaging fire carrying into the RNA, treat to a level that reduces the risk to an acceptable level

P5 Fire Protection- Visual, High Use, Reservoirs, Improvements

1. Suppression Strategy

a Control Fire Intensity Level 1.

- (1) This strategy is extended within 300 feet of improvements, reservoirs, and areas of concentrated use
- (2) Fire Intensity Levels 2-6 is extended throughout the remainder of the Management Area

b Contain. Fire Intensity Level 1.

- (1) This strategy is extended over 300 feet away from improvements, reservoirs, and areas of concentrated use
- (2) The contain suppression strategy may be approved and extended to portions of some management areas, such as 009, 025, 034, 047, and 089, which are further removed from improvements and reservoirs at Fire Intensity Level 2. The strategy should be extended only if analysis shows that a fire at this intensity level will meet management objectives.

Conduct suppression activities with care to protect improvements, visual quality, and water quality. Close supervision will be needed to ensure compliance if tractors and other heavy equipment are used,

Airtanker use will also be closely managed to prevent retardant being dropped directly into reservoirs

2 Prevention

Emphasize fire prevention in developed areas, areas of concentrated use, and during periods of significant activity such as timber harvesting, prospecting, mining, hunting, etc

3 Fuels Treatment

Concentrate fuel treatments along traveled routes, shorelines, developed areas, and areas of concentrated use to protect improvements and to meet visual and water quality objectives

P6 Fire Protection -Wilderness, Wild River

1. Suppression strategy

- a. Contain. Fire Intensity Levels 1-2
- b. Control Fire Intensity Levels 3-6

The contain suppression strategy may be approved and extended to Fire Intensity Levels 3-4 if all of the following conditions are met

- (1) The fire is in an isolated fuel bed of five acres or less, and
- (2) it is very unlikely that the fire can escape from this isolated area, and
- (3) there are no improvements threatened, and
- (4) it is 1,000 feet or more from a lake or reservoir.

c. Confine: Unplanned Ignition

The confine suppression strategy may be approved and extended at any Fire Intensity Level as long as analysis (in the form of an approved Wilderness Management Plan) indicates that resource end management objectives can be met and guidelines have been developed and approved

Fire suppression will meet Forest Service policy direction for wilderness as identified under FSM 2326 11, which requires Forest Supervisor approval to use motorized equipment for fire suppression

2. Prevention

Direct fire prevention efforts at the recreation user with emphasis on the safe use of campfires and tobacco

3. Fuel Treatment

Treat fuels only by prescribed burning by planned ignition. Prescribed burning by unplanned ignition will not be used until the conditions in 1.c., above, are met

MANAGEMENT AREA DIRECTION

The Tahoe National Forest is divided into 106 geographic subdivisions called management areas (MA). The management direction for each MA includes a management emphasis, a set of standards and guidelines, and a list of available management practices. Using the management area direction as a guide, land managers will generate management prescriptions through the project planning process.

Many of these MA's, although physically separated, have similar management emphases. For example, MA numbers 002, 015, 026, 029, 030, 055, **074, 077**, 088, and 093 are all electronic sites under special-use permit. This does not mean that their prescriptions are identical, however. The management direction for each MA was tailored according to the resource potentials and limitations of the area. Because no two management areas are identical, the prescriptions also tend to be unique.

In the same way, a single management area is not homogeneous. There is usually a mosaic of vegetation types, land classes, and human use patterns, including, for example, both young and mature forest stands, riparian corridors, meadows, scenic vistas, or archeological sites. A practice that works well on one acre of the management area may not be appropriate for another. For this reason, the Interdisciplinary and Management Teams tried to build as much flexibility into these directions as possible.

For each management area, you'll find a 'toolbox' of available practices that may be used to achieve multiple-use goals. You may be able to add a practice to the list, as long as it does not conflict with the management area resource emphasis. The decision to add a practice must be justified through project analysis, and then formalized by making an amendment to the Forest Plan.

The MA boundaries represent a transition from one set of opportunities and constraints to another, with management direction established for each. The transition areas along boundaries are flexible, however. You may need to carry direction over from one MA to another in order to protect resource values or to respond to new information gathered in the project analysis.

Management areas are listed in three ways to assist the user: (1) by alphabetical order, (2) by numerical order, and (3) by management theme (Rx). (See Tables V.4, V.5, and V.6.)

Each management area direction is composed of seven sections

I. Description

This section describes the MA in terms of its geographic area, elevation, resource history (e.g., fires), and other pertinent features. Topographic maps of the MA's boundaries, with unique sequential numbers reproduced from 7.5 minute quad maps, are in Appendix L. Topographic maps displaying each MA are also located at each Ranger District and at the **TNF** Forest Supervisor's Office.

II. Summary of Issues, Concerns, and Opportunities

The ICO's relevant to each MA are summarized here. This section, in concert with the physical description above, can help explain some of the 'whys' of management in the area.

III. Resource Management Emphasis

The multiple-use resource management emphasis for the MA is described here. The desired future condition (goal) for the area at the end of the 5-decade planning period (2030) is also described.

IV. Management Area Standards & Guidelines

This section highlights Forest S&G's selected specifically for the management area. These include classifications such as Recreation Opportunity Spectrum (ROS) and Visual Quality Objectives (VQOs). These S&G's may apply to the entire MA or only to portions as specified in this section. Resource Element and Support Maps provided in the map packet show where these S&G's will apply. Although this section highlights some of the Forestwide S&G's (tan pages), all Forestwide Standards and Guidelines apply unless specifically exempted from this MA in this section.

V. Available Management Practices

This section lists the codes and titles for the compatible practices that will be used to meet the resource management emphasis for the area. A complete list and description of all practices is contained in the yellow pages beginning on page V-51.

VI. Proposed Resolution of Issues and Concerns

This section describes how specific issues and concerns for the MA might be resolved. For example, a specific resource concern might be resolved by conducting a quantitative analysis or by applying either a resource prescription or a Forestwide standard and guideline.

VII. Specific Monitoring and Evaluation

This section lists special monitoring or evaluation techniques appropriate to the MA. Monitoring and evaluation requirements for the TNF are discussed in detail in Chapter VI.

TABLE v.4 • MANAGEMENT AREAS (Listed Alphabetically)

MA #	R X	Management Area Name	MA #	R X	Management Area Name	MA #	R X	Management Area Name
087	2	American	102	13	End of the World	024	13	Oregon
012	7	Antelope	047	4	Fordyce	029	12	Pass
016	5	Babbitt	013	8	Forty-Niner	092	13	Peavine
105	13	Barker	089	4	French	023	13	Pendola
109	10	Berry	052	4	Fuller	028	13	Pinoli
097	4	Big	026	12	Galloway	070	13	Pole
106	7	Big Oak	072	5	Glacier Meadows	046	13	Prosser Hill
107	5	Big Tree	022	10	Goodyears	050	4	Prosser Reservoir
038	13	Billy	080	1	Granite Chief	062	2	Queens
078	10	Blue	041	2	Grouse	048	3	Red
055	12	Boreal Ridge	104	5	Grouse Falls	030	12	Ruby
039	4	Bowman	115	12	Harding	036	14	Sagehen Basin
101	13	Brimstone	018	13	Henness	043	12	Sagehen Station
034	4	Bullards	052	12	Hirschdale	021	13	Sardine-Worn
010	13	Cal-Ida	084	13	HumbugSailor	068	13	Sawtooth
007	8	Calpine	002	12	Ida	086	11	Scott
006	13	Canyon	031	7	Kyburz	011	13	Smithneck
001	9	Carman	009	3	Lakes Basin	081	2	Snow
059	3	Casa Loma	005	13	Laveuola	042	13	South Yuba
044	2	Castle	108	7	Liile Oak	057	8	Spaulding
079	2	Cedars	176	3	Loch Leven	088	12	Squaw Peak
065	13	Chalk	033	11	Lola	032	4	Stampede-Boca
008	13	Chapman	100	5	Lyon Peak/Needle Lake	058	11	Steepphollow
077	12	Cisco Butte	095	7	Macy	096	4	Sugar Pine
003	7	Coolbriih	049	13	Magonigal	085	5	Sugar Pine Point
020	13	Cornish	074	12	Martis	060	11	Summa
014	5	Devils Postpile	045	4	Meadow	091	13	Sunflower
090	8	Divide	037	5	Meadow Lake	004	3	Sunnyside
053	10	Donner	067	13	Mears	071	11	Tinkers
056	8	Donner Pass	025	4	Milton-Jackson	054	12	Truckee
064	5	East Orchard	073	13	Monumental	069	8	Truckee River
019	8	Eighty Nine	040	13	Moonshine	061	8	Twenty
098	13	Eldorado	099	8	Mosquio	083	13	Wabena-Steamboat
094	5	Elliot	082	6	North Fork	093	12	Ward
063	12	Emigrant	075	5	Onion	103	13	West Orchard
						066	8	Yuba Gap

MANAGEMENT PRESCRIPTION (Rx) Key to Management Prescription codes:

- | | | | |
|---|------------------------------------|----|----------------------|
| 1 | Wilderness | 8 | Visual |
| 2 | Dispersed Non-Motorized Recreation | 9 | Watershed |
| 3 | Dispersed Recreation | 10 | Adjustment |
| 4 | Reservoir | 11 | Winter Recreation |
| 5 | Research and Botanical | 12 | Special Use |
| 6 | Wild River | 13 | Timber and Range 1/ |
| 7 | Wildlife | 14 | Cooperative Research |
| | | 15 | Visual and Timber 1/ |

1/ Rx 13 in this table includes Rx 13 and Rx 15 because many of the Management Areas (MA's) under this dual heading contain both management prescriptions.

TABLE v.5 - MANAGEMENT AREAS (Listed Numerically)

MA #	R X	Management Area Name	MA #	R X	Management Area Name	MA #	R X	Management Area Name
001	9	Carman	038	13	Billy	074	12	Martis
002	12	Ida	039	4	Bowman	075	5	Onion
003	7	Coolbrith	040	13	Moonshine	076	3	Loch Leven
004	3	Sunnyside	041	2	Grouse	077	12	Cisco Butte
005	13	Lavezzola	042	13	South Yuba	078	10	Blue
006	13	Canyon	043	12	Sagehen Station	079	2	Cedars
007	8	Calpine	044	2	Castle	080	1	Granite Chief
008	13	Chapman	045	4	Meadow	081	2	Snow
009	3	Lakes Basin	046	13	Prosser Hill	082	6	North Fork
010	13	Cal Ida	047	4	Fordyce	083	13	Wabena Steamboat
011	13	Smithneck	048	3	Red	084	13	Humbug Sailor
012	7	Antelope	049	13	Magonigal	085	5	Sugar Pine Point
013	8	Forty-Niner	050	4	Prosser Reservoir	086	11	Scott
014	5	Devils Postpile	051	12	Hirschdale	087	2	American
015	12	Harding	052	4	Fuller	088	12	Squaw Peak
016	5	Babbitt	053	10	Donner	089	4	French
017	N/A	(Not Used)	054	12	Truckee	090	8	Divide
018	13	Henness	055	12	Boreal Ridge	091	13	Sunflower
019	8	Eighty-Nine	056	8	Donner Pass	092	13	Peavine
020	13	Cornish	057	8	Spaulding	093	12	Ward
021	13	Sardine-Worn	058	11	Steephollow	094	5	Elliot
022	10	Goodyears	059	3	Casa Loma	095	7	Macy
023	13	Pendola	060	11	Summa	096	4	Sugar Pine
024	13	Oregon	061	8	Twenty	097	4	Big
025	4	Miiton Jackson	062	2	Queens	098	13	Eldorado
026	12	Galloway	063	12	Emigrant	099	8	Mosquito
027	NIA	(Not Used)	064	5	East Orchard	100	5	Lyon Peak/Needle Lake
028	13	Pinoli	065	13	Chalk	101	13	Brimstone
029	12	Pass	066	8	Yuba Gap	102	13	End of the World
030	12	Ruby	067	13	Mears	103	13	West Orchard
031	7	Kyburz	068	13	Sawtooth	104	5	Grouse Falls
032	4	Stampede-Boca	069	8	Truckee River	105	13	Barker
033	11	Lola	070	13	Pole	106	7	Big Oak
034	4	Bullards	071	11	Tinkers	107	5	Big Tree
035	NIA	(Not Used)	072	5	Glacier Meadows	108	7	Little Oak
036	14	Sagehen Basin	073	13	Monumental	109	10	Berry
037	5	Meadow Lake						

MANAGEMENT PRESCRIPTION (Rx) Key to Management Prescription in codes:

- | | | | |
|---|------------------------------------|----|----------------------|
| 1 | Wilderness | 8 | Visual |
| 2 | Dispersed Non-Motorized Recreation | 9 | Watershed |
| 3 | Dispersed Recreation | 10 | Adjustment |
| 4 | Reservoir | 11 | Winter Recreation |
| 5 | Research and Botanical | 12 | Special Use |
| 6 | Wild River | 13 | Timber and Range 1/ |
| 7 | Wildlife | 14 | Cooperative Research |
| | | 15 | Visual and Timber 1/ |

Rx 13 in this table includes Rx 13 and Rx 15 because many of the Management Areas (MA's) under this dual heading contain both management prescriptions

TABLE v.6 MANAGEMENT AREAS BY MULTIPLE USE MANAGEMENT PRESCRIPTION GROUPING

Rx#	MANAGEMENT PRESCRIPTION	MANAGEMENT AREAS	
1	WILDERNESS	080 Granite Chief	
2	DISPERSED NONMOTORIZED RECREATION	041 Grouse 044 Castle 062 Queens	079 Cedars 081 snow 087 American
3	DISPERSED RECREATION	004 Sunnyside 009 Lakes Basin 048 Red	059 Casa Loma 076 Loch Leven
4	RESERVOIR	025 Milton Jackson 032 Stampede-Boca 034 Bullards 039 Bowman 045 Meadow 047 Fordyce	050 Prosser Reservoir 052 Fuller 089 French 096 Sugar Pine 097 Big
5	RESEARCH AND BOTANICAL	014 Devils Postpile 016 Babbm 037 Meadow Lake 064 East Orchard 072 Glacier Meadows 075 Onion	085 Sugar Pine Point 094 Elliot 100 Lyon Peak/Needle Lake 104 Grouse Falls 107 Big Tree
6	WILD RIVER		
7	WILDLIFE	082 North Fork	
	WILDLIFE	003 Coolbrith 012 Antelope 031 Kyburz	095 Macy 106 Big Oak 108 Lmle Oak
8	VISUAL	007 Calpine 013 Forty-Niner 019 Eighty-Nine 056 Donner Pass 057 Spaulding	061 Twenty 066 Yuba Gap 069 Truckee River 090 Divide 099 Mosquito
9	WATERSHED	001 Carman	
10	ADJUSTMENT	022 Goodyears 053 Donner	078 Blue 109 Berry
11	WINTER RECREATION	033 Lola 058 Steepollow 060 Summit	071 Tinkers 086 Scott
12	SPECIAL USE	002 Ida 015 Harding 026 Galloway 029 Pass 030 Ruby 043 Sagehen Station 051 Hirschdale	054 Truckee 055 Boreal Ridge 063 Emigrant 074 Martis 077 Cisco Butte 088 Squaw Peak 093 Ward

TABLE V.6 - Continued

Rx#	MANAGEMENT PRESCRIPTION	MANAGEMENT AREAS	
13	TIMBEWRANGE 1/		
14	COOP RESEARCH	036 Sagehen Basin	
15	VISUAL/TIMBER 1/	005 Lavezzola 006 Canyon 008 Chapman 010 Cal Ida 011 Smithneck 018 Henness 020 Cornish 021 Sardine-Worn 023 Pendola 024 Oregon 028 Pinoli 038 Billy 040 Moonshine 042 South Yuba 046 Prosser Hill	049 Magonigal 065 Chalk 067 Mears 068 Sawtooth 070 Pole 073 Monumental 083 Wabena-Steamboat 084 Humbug Sailor 091 Sunflower 092 Peavine 098 Eldorado 101 Brimstone 102 End of the World 103 West Orchard 105 Barker

prescriptions

TAHOE NATIONAL FOREST

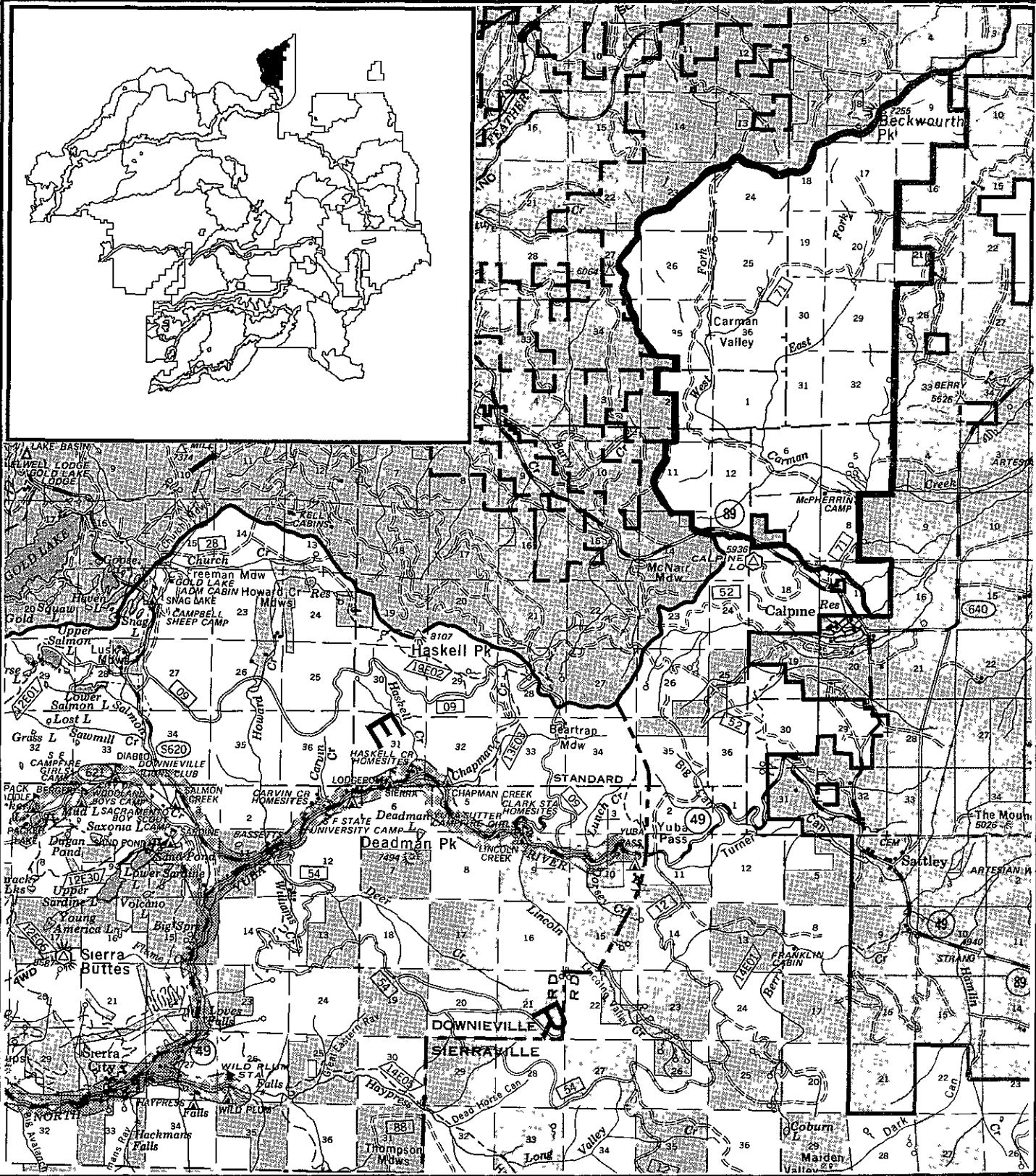
LAND & RESOURCE MANAGEMENT PLAN

MANAGEMENT AREAS

MANAGEMENT AREA 001

CARMAN

T22N, R13E



001 CARMAN

12,242 GROSS ACRES

12,164 NFS ACRES

I. DESCRIPTION

This management area (MA) is located northwest of Calpine and south of Beckwourth Peak. A history of resource abuse prior to Federal land acquisition, including overgrazing and destructive logging practices (circa 1920's), left Carman Creek a severely deteriorated watershed. Major stream channels are gullied, slopes, meadows, and channel banks are actively eroding, and wildlife/range forage and visual quality are correspondingly deteriorated. The lower Carman Valley and Foichi Meadow were used in the past by waterfowl for nesting habitat. Waterfowl habitat has been reduced over the past fifty years because the water table has been lowered by the downcutting of Carman Creek. Several existing roads are eroding and require stabilization and drainage, obliteration, or relocation. Elevation varies from 5,000 feet in Lower Carman Valley to about 7,300 feet at Beckwourth Peak.

The three principal vegetative types are timber, meadow, and sagebrush. Timber stands consist of second growth Jeffrey pine, white fir, and incense cedar. Scattered Washoe pine have also been found in the area. Sagebrush has entered meadows where the water table was lowered by channel erosion and on flats and sidehills that were overgrazed. Timber harvest has been limited to salvage and fuelwood since the 1940's. There are 703 acres of wetlands. There are 2,232 acres of unsuitable productive forest land.

Sheep grazing has taken place in the area since 1921 and continues presently as the Beckwourth Allotment.

Both prehistoric and historic cultural sites are common in the area. Of notable interest are the McPherrin Sheep Camp (Basque) and a cemetery located on private land. Lower Carman Meadow contains an old railroad grade. Construction of this grade caused relocation of Carman Creek, which resulted in some stream channel erosion.

Moderate dispersed recreation use occurs in the area during the summer, however, winter recreation is limited by the lack of snow cover. Approximately fifty percent of the area is accessed.

The area is included in a Memorandum of Understanding with the Air Force and is identified as a suitable site for military training and survival activities. These activities take place primarily in upper Carman Valley.

Several large fires have occurred in the last 10 years, 2,000 acres of plantation have been established.

The selected emphasis species are prairie falcon, deer, peregrine falcon, and the riparian, wetlands, and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

This area has numerous actively eroding slopes and stream courses; wetlands and meadows are rapidly deteriorating. Several existing roads are currently causing erosion problems.

A small resident deer herd inhabits the area, there are opportunities for improving its range. Migrating waterfowl continue to use the wet meadows and channels and there are opportunities to establish waterfowl nesting areas. Waterfowl habitat improvement can be done in conjunction with watershed restoration.

An opportunity exists for range improvement.

Fuelwood opportunities exist from timber harvest in fuelbreaks and timber stands.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 89. This highway is included in the Master Plan of state Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is watershed protection and restoration. Design watershed restoration to improve waterfowl habitat and the forage resource whenever possible along lower Carman Creek and Foichi Meadow. Emphasize long rotation even-aged timber management that protects watershed qualities.

Plan management practices in the Highway 89 middle ground to blend with the natural landscape character.

The desired future state is a mosaic of vigorous timber stands consisting of various age classes (0-150 years), fields of shrubs and stabilized meadows, wetlands, and stream channels. Streamside management zones will remain unsuited for regulated timber production. Grass areas, wetlands, and stringer meadows will emphasize soil protection and, where compatible, maximize forage production. Establishment of waterfowl nesting areas in appropriate sites will take precedence over forage production. Shrub management practices will be coordinated with timber to improve range and deer forage while protecting the soil.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Routed natural
- B Visual Quality Objective - Partial retention as seen from Highway 89, and partial retention for the remaining area while allowing for watershed restoration and waterfowl habitat improvements.
- C Transportation Management Policy - Surface roads that remain open where they are eroding or causing watershed damage. Revegetate and stabilize closed roads.
- D Off-highway Vehicle Restrictions - Designated routes only. Open to winter over-the-snow vehicles
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- C5 Early Succession Vegetation Management
- C8 Structural Habitat improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance
- D1 Range Management - Permanent Range Type (Intensive Management)
- D4 Range Management - Transitional Range Type (Intensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitional)
- D8 Range Improvement - Structural (Permanent and Transitional)
- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven-Age Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning
- F1 Water Resource Improvement
- F2 Water Yield improvement
- F3 Flow Timing improvement
- F4 Soils Resource improvement
- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- G5 Minerals Management - Saleables

- J1 Land Adjustments - Retain and Acquire
- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 ~~Multiresource Road~~ Access Development-Road Construction/ Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L13 Transportation Management, Trails - Restricted Use
- P1 Fire Protection- Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Resolve watershed problems through a combination of management and improvement activities. Stabilize stream channels and meadows to reduce streambank undercutting and gully erosion. Remove sheep from sensitive areas using herding for better distribution.

Sacrifices of short term visual quality objectives will be made to allow for watershed restoration projects and waterfowl habitat improvements when needed.

The prescription limits regeneration harvesting to an average of 6.7 percent of the suitable land base per decade. Prohibit regulated harvest in streamside management areas.

Surface portions of some roads to be left open, and close and revegetate roads unnecessary for resource management. Watershed improvement work, especially in conjunction with wildlife habitat improvement and range management, will benefit all three resource concerns. Prepare a coordinated waterfowl management and watershed improvement plan in cooperation with California Department of Fish and Game and the USDA Soil Conservation Service.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor stream courses within the Carman Creek watershed to evaluate the effects of stabilization, restoration, and management activities. Monitor water quality (sediment) and quantity (crest gages) and evaluate the sites to determine the success of restoration techniques.

Evaluate the effectiveness of waterfowl nesting areas.

Coordinate with California Department of Fish and Game for waterfowl habitat improvement and monitoring, and with the USDA Soil Conservation Service for watershed improvement.

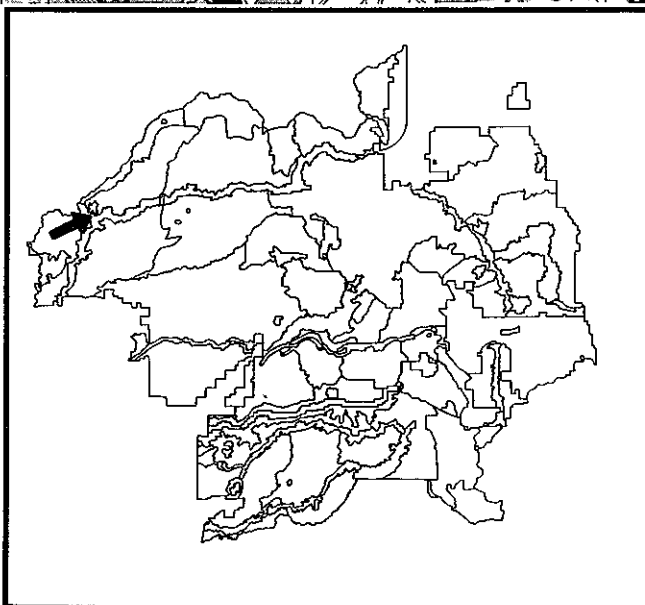
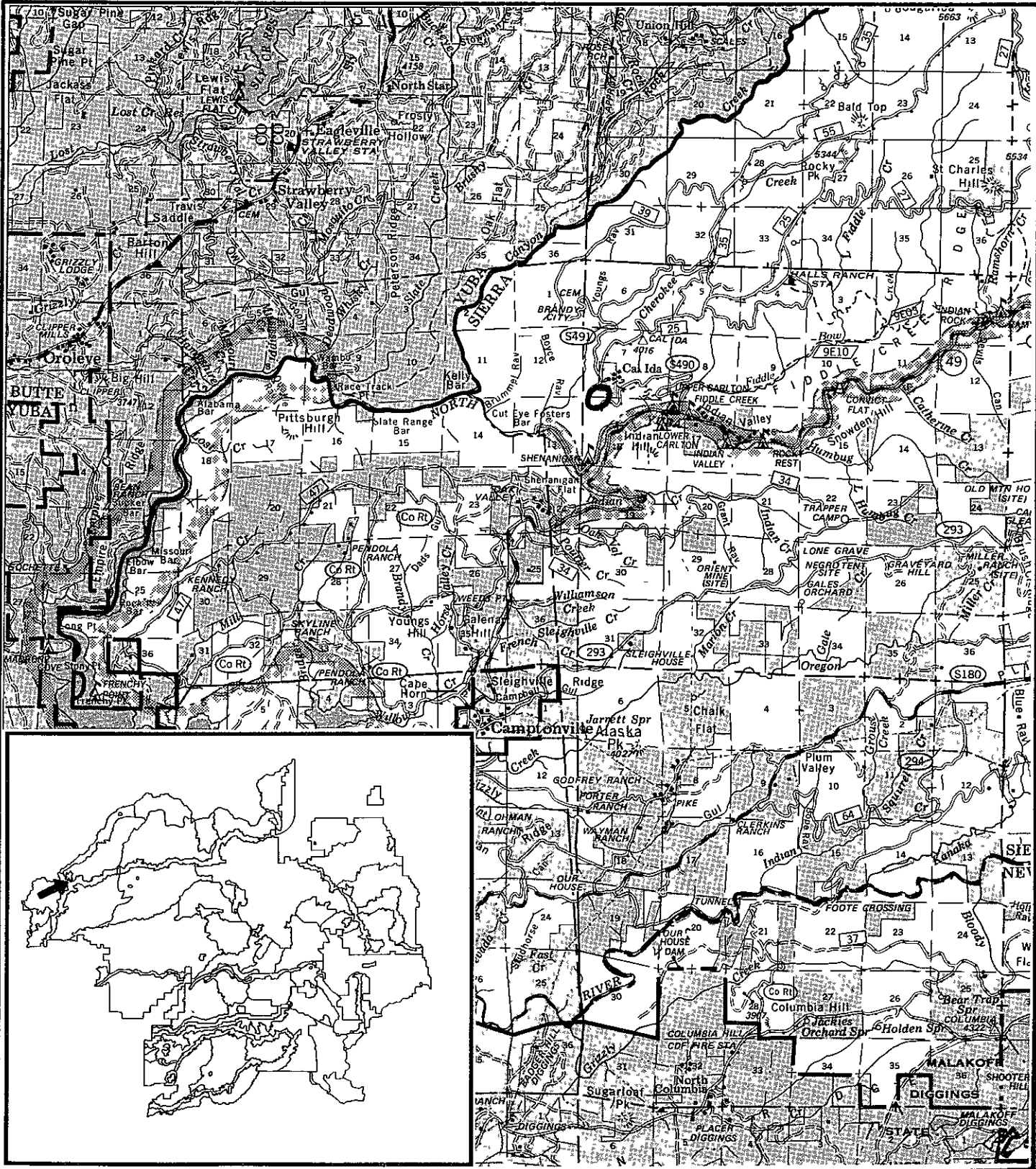
The Partial Retention VGO ensures that the natural scenic quality is maintained.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 002

IDA

T19N, R9E



002 IDA

12 GROSS ACRES

12 NFS ACRES

I. DESCRIPTION

This management area (MA) is approximately 5 miles north of Camptonville atop an unnamed knoll near the Cal-Ida mill site. Elevation is 3,525'. This area was first used as a dirt parking lot by Pacific Telephone in 1966 for the installation of Pacific Bell, Caltrans, and Sierra County Sheriff's Dept. Existing improvements include four small buildings and a parking lot. The electronic site plan was approved in 1974.

Dense mixed conifer poles and saplings surround the area. There are wetlands. Mature forest is located to the west.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Compatible electronic uses will be placed on this site or other approved electronic sites.

Visual quality is a resource management concern for this MA. This concern focuses on land seen as middleground from Highway 49.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is use as an electronic site.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural
- B Visual Quality Objective - Partial retention as viewed from Highway 49
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Designated routes only
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- J2 Land Adjustments - Limited
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The electronic ~~site~~ plan provides guidelines and ~~direction~~ for management and use of the area. Revise this plan for new development and update ~~as~~ needed. The Forest ~~Service~~ and ~~the~~ Federal Communications Commission will evaluate all new ~~applications~~ for compatibility with existing uses. Incompatible frequencies will be ~~denied~~

The ~~partial~~ retention VQO, ~~as~~ viewed from Highway 49, ensures that land uses do not degrade the scenic quality of the Highway 49 ~~corridor~~.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

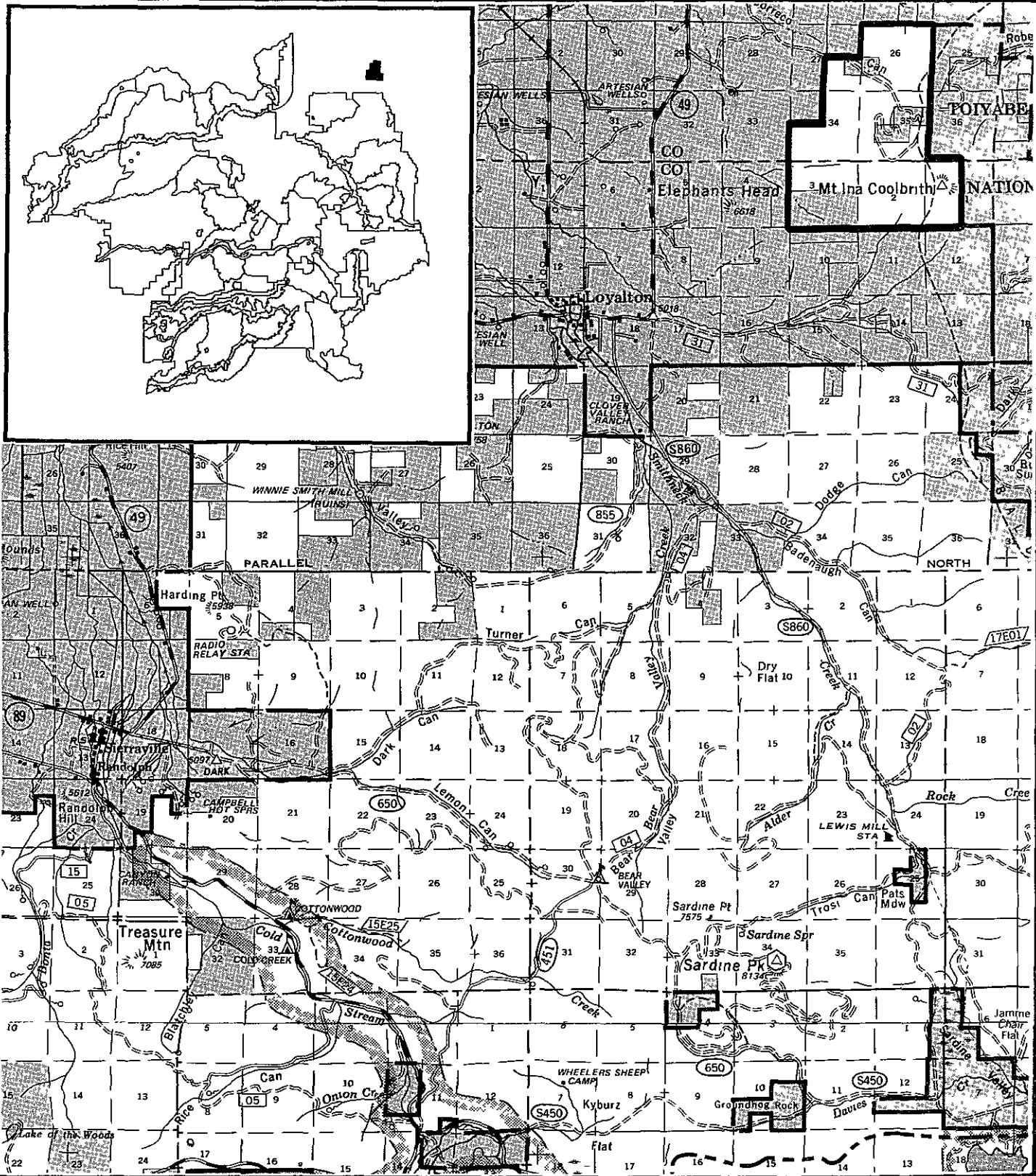
None

- 1/** Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/** Refer to complete Descriptions of Management ~~Practices~~ in Chapter V

MANAGEMENT AREA 003

COOLBRITH

T22N, R16E



003 COOLBRITH

3,364 GROSS ACRES

2,750 NFS ACRES

I. DESCRIPTION

This management area (MA) is located four miles south of Beckwourth Pass and four miles northeast of Loyalton Mt. Ina Coolbrith is the highest point in the area at 8,059 feet The lowest point, 5,600 feet, is at the mouth of Corredo Canyon

The lower slopes are vegetated with sagebrush and juniper. Higher slopes have an overstory of large Jeffrey pine and an understory of white fir. Several springs and seeps are in the area There are no wetlands. Part of the area was logged in the 1930's. There are 757 acres of unsuitable productive forest land.

This MA is separated from other National Forest System lands by 2 miles of private land. The primary access road crosses the Lucky Hereford Ranch and, once in the management area the road crosses another private parcel of land. The eastern boundary of the MA is adjacent to the Toyabe National Forest

The primary access road has no formal rights-of-way; therefore, there is no public access.

A former grazing allotment within the MA was closed due to marginal forage and conflicts with wildlife The MA provides deer winter range, which was a factor in closing the allotment. The MA is a popular deer hunting area, in spite of the restricted access.

The City of Santa Clara (adjacent landowner) has evaluated this MA as a potential site for a wind generator for providing electricity. Nearby lands are managed by the Bureau of Land Management (BLM) for similar resource objectives

Selected emphasis species are deer, mountain quail, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There are no rights-of-way across surrounding private land for access to this management area Public and administrative access is needed.

There is an opportunity for generating wind power in this MA.

There is an opportunity for land adjustment with BLM.

There is an opportunity to improve the habitat for deer and upland game in this MA.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphases are to maintain or improve wildlife habitat and to obtain legal access for the public to this area This area is unsuited for regulated timber production.

The desired future condition is a habitat for mule deer consisting of a mixture of browse and cover.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 2/

- A. Recreation Opportunity Spectrum - Roaded natural
- B. Visual Quality Objective - Modification
- C. Transportation Management Policy - Roads open with restricted use Obtain rights-of-way.
- D. On-highway Vehicle Restrictions - Motor vehicle travel on designated routes only, in summer. Closed in winter.
- E. Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- C5 Early Succession Vegetation Management
- C6 Mldsuccession Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- D3 Range Management - Permanent Range Type (Some Lwestock)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)
- F4 Soils Resource Improvement
- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- G5 Minerals Management - Saleables
- J2 Land Adjustments - Limited
- L1 Timber Access Road Development - Road Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L13 Transportation Management, Trails - Restricted Use
- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Obtain necessary right-of-way for public and administrative access

Cooperate with the City of Santa Clara to determine feasibility of energy development

Develop a wildlife management plan for this area emphasizing wildlife carrying capacity for indicator species.

Permit grazing and off-highway vehicle (OHV) use in this area that does not conflict with wildlife habitat management objectives.

Coordinate land adjustment study with BLM.

VII. SPECIFIC MONITORING AND EVALUATION

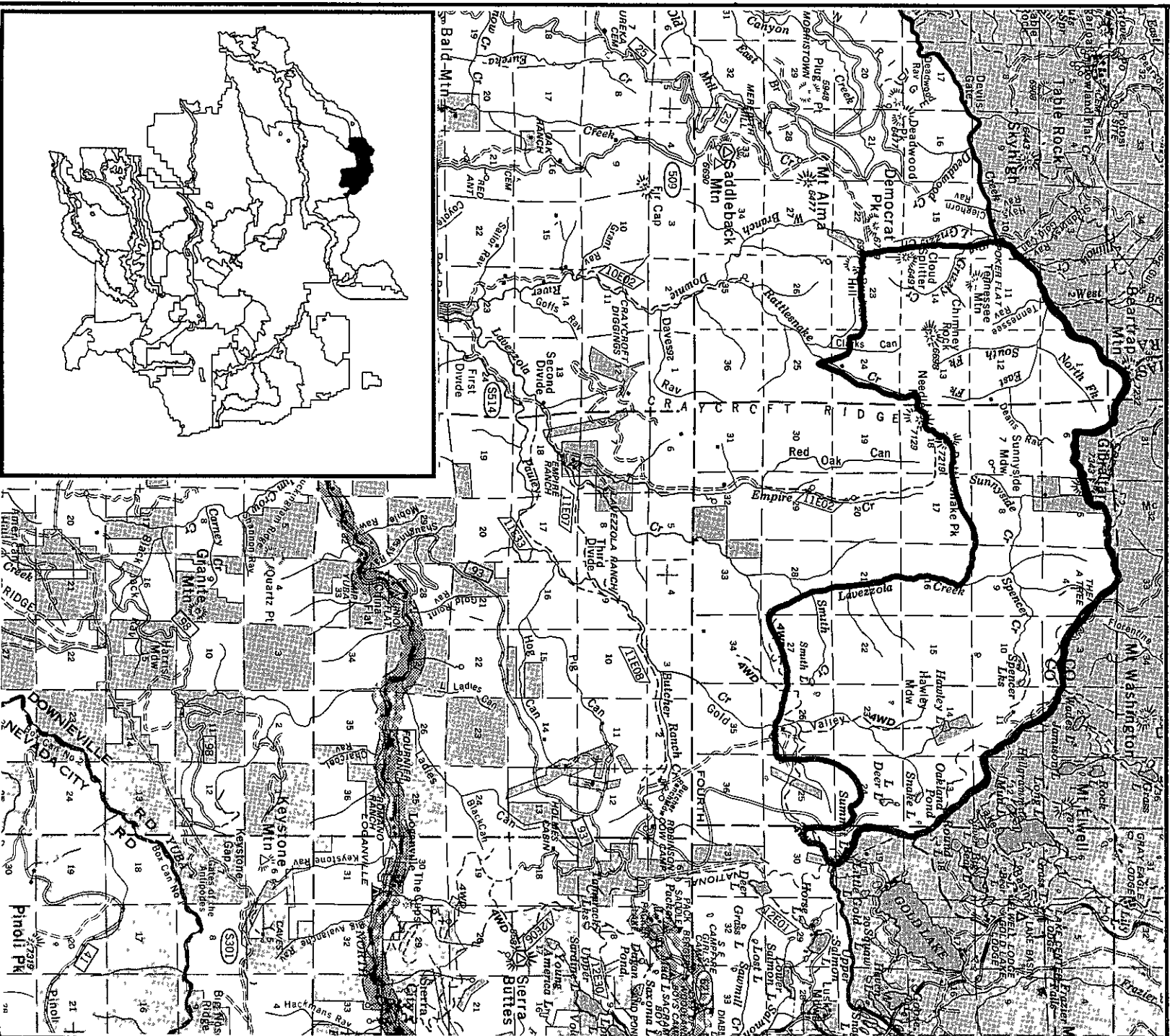
Monitor effects of grazing and OHV use on wildlife habitat

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 004

SUNNYSIDE

T21N, R11E



004 SUNNYSIDE

15,425 GROSS ACRES 14,935 NFS ACRES

I. DESCRIPTION

This management area (MA) is located on the **extreme north** boundary of the **Tahoe National Forest**. The land is characterized by high mountains and steep canyons, the **majority** of which provide highly scenic **vistas** from the limited roads and trails within the area. Elevations range from 4,700 feet along Lavenola Creek to 7,343 feet at the summit of **Gibraltar Mountain**. Only **10** percent of the land area is accessed.

Recreation use is light in all categories due to limited access.

The **Pacific Crest Trail** runs along the northern boundary of this **MA**.

The **Chimney Rock and Spencer Lake Trails** receive light use.

The **historic** mining community of **Poker Flat** is located within the area. Remnants and recent evidence of **both** placer and lode mining operations are found throughout the area. There is a **National Register site** located in the **MA**.

This **MA** included portions of **two** former **RARE II areas** (East Yuba and West Yuba). The **1984 California Wilderness Act** designated multiple use management for these areas.

Vegetation is **mixed** conifer and red fir, interspersed with large open brushfields. There are **866** acres of wetlands. Wet meadows are characterized in the upper drainages. A portion of the **Gold Valley Cattle Allotment** is within this **MA**. There are **5,137** acres of **unsuitable productive** forest land.

A portion of spotted owl habitat area E-1 lies within this **MA**.

This **MA** provides excellent summer deer range. **Selected** emphasis species are deer, spotted owl, **rainbow** and **brook** trout, and the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The **highly scenic** and **largely unroaded character** of the **Sunnyside MA** has **drawn** much **public interest** in **maintaining** the **historic character** of the **MA**. **Residential occupancy for other than mining purposes is a concern at the historic community of Poker Flat.**

The **proposed** **system** **to** **provide** **access** **to** **the Lavezzola MA** **will pass through this area.** **This development will be of character with the level of development for the remainder of the MA.**

There is a need for protection of the highly scenic values of this area. The existing wet meadows will **require** protection from all types of uses such as equestrian, **fire**, **hunting** or grazing use.

There is an **opportunity** to manage the area for **wildlife**, **recreation** and **hiking**, and **motorized** **vehicle** access.

There is an **opportunity** to improve **deer** habitat by **removing** brush to **create** more **diversity** in the brush **vegetation**.

There is a proposal to construct the **Lavezzola Hydroelectric Project diversion** structure in the southeastern portion of the **MA**.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize dispersed recreation opportunities by maintaining the scenic and remote character of the management area. Emphasize special cutting in **timber** harvest to maintain or create a **diversity** of age **classes**. **Clearcutting** will be limited to the creation of small openings where necessary to regenerate **areas** or to treat **diseased** or insect infected timber.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - ~~Semi-primitive~~ motorized except along the main haul route - roaded natural.
- B Visual Quality Objective - Partial retention.
- C Transportation Management Policy - Apply Forestwide Standards and Guidelines
- D ~~Off-Highway~~ Vehicle Restrictions - Designated routes only summer. Open to winter over-the-snow travel
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- Ai Nordic ~~Cross-Country~~ Skiing
- A4 Open ~~OHV~~
- A5 Restricted OHV**
- A9 Recreation Management private & Mher Public Sector)

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2** Stream Fisheries - Structural Improvement and Maintenance
- C5** Early Succession Vegetation Management
- C6** Midsuccession Vegetation Management
- C7** ~~Late~~ Seral Stage Vegetation Management
- C8** structural Habitat Improvement and Maintenance
- C9** Wet Meadow Habitat Improvement and Maintenance

- D2** Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (~~Extensive~~ Management)

- D7 Range Improvement - ~~Nonstructural~~ (Permanent and Transitory)
- D8** Range Improvement - Structural (Permanent and Transitory)

- E7 **Special Cutting**
- E10** Artificial Stand Reestablishment
- E11 Natural Sand Reestablishment
- E13 Release and Weeding
- E14 **Precommercial** Thinning

- F1** Water Resource Improvement
- F3 Flow Timing Improvement
- F4 **Soils** Resource Improvement

- G1** Minerals Management - ~~Locatables~~
- G2** Minerals Management - Locatable ~~Withdrawals~~
- G3** Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5** Minerals Management - Saleables

- J1 Land Adjustments - Retain and Acquire

- L1 Timber ~~Access~~ Road Development - Road Construction/Reconstruction
- L2** ~~Multiresource~~ Road Access Development - Road Construction/Reconstruction
- L3** Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5** Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L6** Trail Construction/Reconstruction - Special Requirements
- L8** Transportation Management, Roads - Open
- L9** Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

L14 Pacific Crest National Scenic Trail Management

P1 Fire Protection • Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

To maintain the highly scenic and remote character of the area, **limit** access to economic road strategies with construction predominantly on ridgetops

Emphasize special **cutting** to compliment visual and recreational **opportunities**

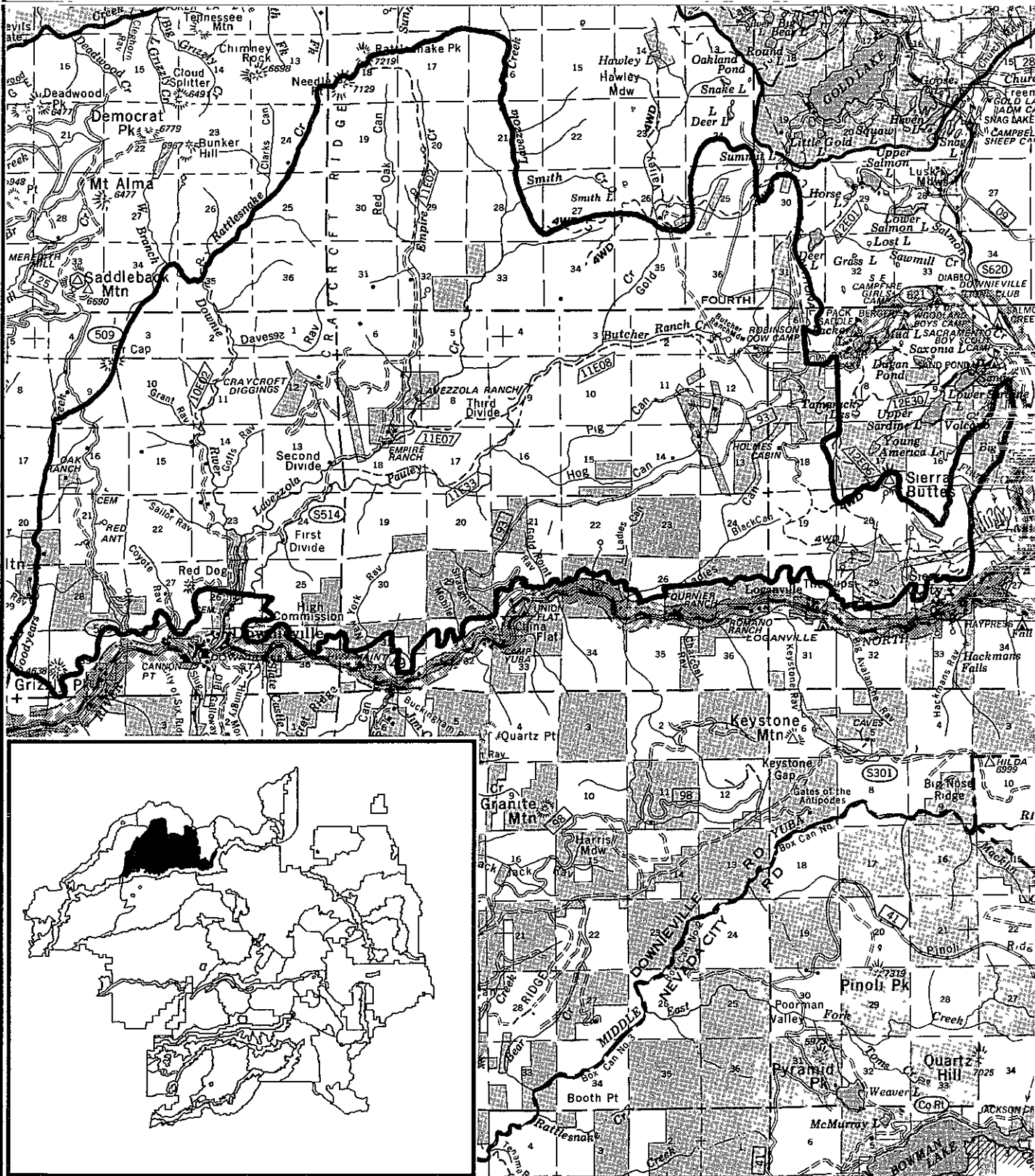
Construct trailheads at key points where recreation demand is sufficient

Resolve the **mining/occupancy** concern at Poker Flat and elsewhere by **permitting** only those uses and occupancies which are consistent with min

MANAGEMENT AREA 005

LAVEZZOLA

T20N, R11E



005 LAVEZZOLA

45,744 GROSS ACRES

40,203 NFS ACRES

I. DESCRIPTION

This management area (MA) is located north of Highway 49 between Goodyears Bar and Sierra City, extending north and east to the Sunnyside and Lakes Basin management areas. Elevations range from 3,200 feet along the North Yuba River to 7,400 feet on the west slopes of the Sierra Buttes.

Vegetation is mostly mixed conifers, shrubs in large open brushfields, and true fir stands. Topography is characterized by several steep canyons leading to the North Yuba River. There are 1,354 acres of wetlands. There are 9,207 acres of unsuitable productive forest land.

The area is considered by the United States Geological Survey (USGS) to have a relatively high potential for mineral development. This includes both hard rock and placer deposits.

Auriferous channels of the famed Northern Mines region extend throughout the area. The impacts of past mining activity are evident in almost every portion of the Lavezzola MA. There are numerous seasonal mining-related occupancies within the area. Many occupancies are not authorized for mining.

The 2,600-acre Cap Fire of 1978 is located in this area. There are 600 acres of plantations within the burn, and 600 acres of reforestation needs.

The northern portion of the MA included portions of two former RARE II areas (East Yuba and West Yuba). The 1984 California Wilderness Act designated multiple use management, other than Wilderness, for these areas.

Downieville's domestic water supply is from Pauley Creek.

There are many significant archaeological sites.

Only 20 percent of the area is considered accessed.

The Pacific Crest Trail is located along the northeast boundary of this area, which receives heavy dispersed recreation use. Other trails include the Butcher Ranch and Second Divide Trails, which access the major streams within the area. The Empire Creek Trail provides foot access to the Sunnyside MA.

Portions of the Gold Valley Cattle Allotment and Cherokee-Saddleback Sheep Allotment are within the MA.

This MA provides excellent summer deer range.

Portions of spotted owl habitat areas D-3, E-1, E-2, and E-3 lie within this MA.

Lavezzola Creek has been designated a wild trout stream.

Selected wildlife emphasis species for this area are deer, spotted owl, pileated woodpecker, goshawk, rainbow and brook trout, and the riparian, meadow, hardwood, and wetlands groups. Lavezzola, Pauley, and Goodyears Creeks, and the Downie River offer excellent fishery habitat.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 49. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

In those areas of high scenic quality there is a concern that long span cable logging will have an unacceptable impact on visual quality.

Log haul is restricted through Downieville due to weight limits on county streets. Although the area has many 'mining' and low standard roads, there is an inadequate collector road system.

There is a concern that with improved access, there may be increased vandalism to archaeological sites

There is some concern regarding possible uncontrolled OHV use and the impact upon wetlands in the Butcher Ranch and Gold Valley areas

There is a concern that large areas of contiguous fuels could result in large wildfires, especially in the plantations of the Cap Fire.

There is an opportunity to emphasize intensive timber management

An opportunity exists to develop an adequate transportation system.

An opportunity exists to emphasize the transitional range resource within this MA in openings created by timber harvest

Opportunities exist to improve deer habitat through burning brush

Opportunities exist to provide sustained production of commodity resources such as timber, forage, and wildlife as well as to produce minerals from highly mineralized areas

The large volume of water produced on high gradient streams presents an opportunity to develop hydroelectric power

Several hydroelectric projects have been proposed. The concern is for soil stability, water quality, fisheries, and maintenance of the goals of the wild trout stream

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitional range opportunities created by timber harvest.

Emphasize wildlife, wild trout, and watershed values. In managing streamside management zones, spotted owl habitat areas, and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuited for timber production.

Emphasize recreation opportunities on system trails by giving consideration to trail use and the recreation experience of trail users in project planning

Emphasize development of operating plans for minerals management consistent with other resource values

Emphasize fire protection that uses resource management practices to reduce fuel hazards and to break up continuous fuel beds.

Concentrate fuels treatment along roads and selected ridgetops. Treat activity fuels located away from roads and ridgetops during site preparation.

The desired future condition for lands intensively managed for timber production is plantations through small sawlog-size stands of the mued conifer type. Manage these stands on a short rotation schedule of 50 to 120 years. The desired future condition in red fir and lodgepole stands is even-aged plantation through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention initial VQO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mued conifer stands will be managed on a short rotation basis. This letter category includes approximately 4,968 acres. The remaining land within the management area will be similar to the present condition.

Emphasize development of administrative access roads only to the degree necessary to meet management needs. Maintain other roads in the MA at a standard that is commensurate with the dispersed recreation goals for the area. Maintain and improve the trail system within the MA.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural and semi-primitive motorized in the Sierra Buttes area
- B Visual Quality Objective - Partial retention for the middleground of Highway 49 Variety class A lands will be partial retention Modification for the remainder of the area. Maximum modification will be allowed on a case-by-case basis In areas that have a modification or maximum modification initial VQO and have herein been assigned the modification VQO
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Off-Highway Vehicle Restrictions- Designated routes only summer. Open to winter over-the-snow travel.
- E Forestwide Standards & Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- AI 1 Recreation or IS Site Construction or Rehabilitation

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- 07 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F3 Flow Timing Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L6 Trail Construction/Reconstruction - Special Requirements
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use

- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - ~~Restricted~~ Use
- L14 Pacific Crest National Scenic Trail Management

- P1 Fire ~~Protection~~ - ~~Continuous~~ Fuels
- P2 Fire Protection - High ~~Country~~ Non-Continuous Fuels
- P3 ~~Fire Protection~~ - ~~Improvements~~

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Develop a transportation system to meet management needs. Manage roads to reduce or prevent vandalism to archaeological sites. Manage the trail system to enhance dispersed recreation opportunities including motorized access where appropriate.

Manage wetlands and cultural sites to prevent damage from all ~~types~~ of use. Place restrictions, signing, and physical closures where necessary.

Manage the Highway 49 middle ground to maintain a predominantly natural landscape.

Project planning will identify measures necessary to maintain visual quality needed for the desired recreation experience on system trails.

The partial retention VQO established for the Highway 49 middle ground and variety class A lands ensures that natural scenic quality is maintained.

Develop spotted owl management plans for SOHA's D-3, E-1, E-2, and ~~E-3~~.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Evaluate OW impacts on wetlands.

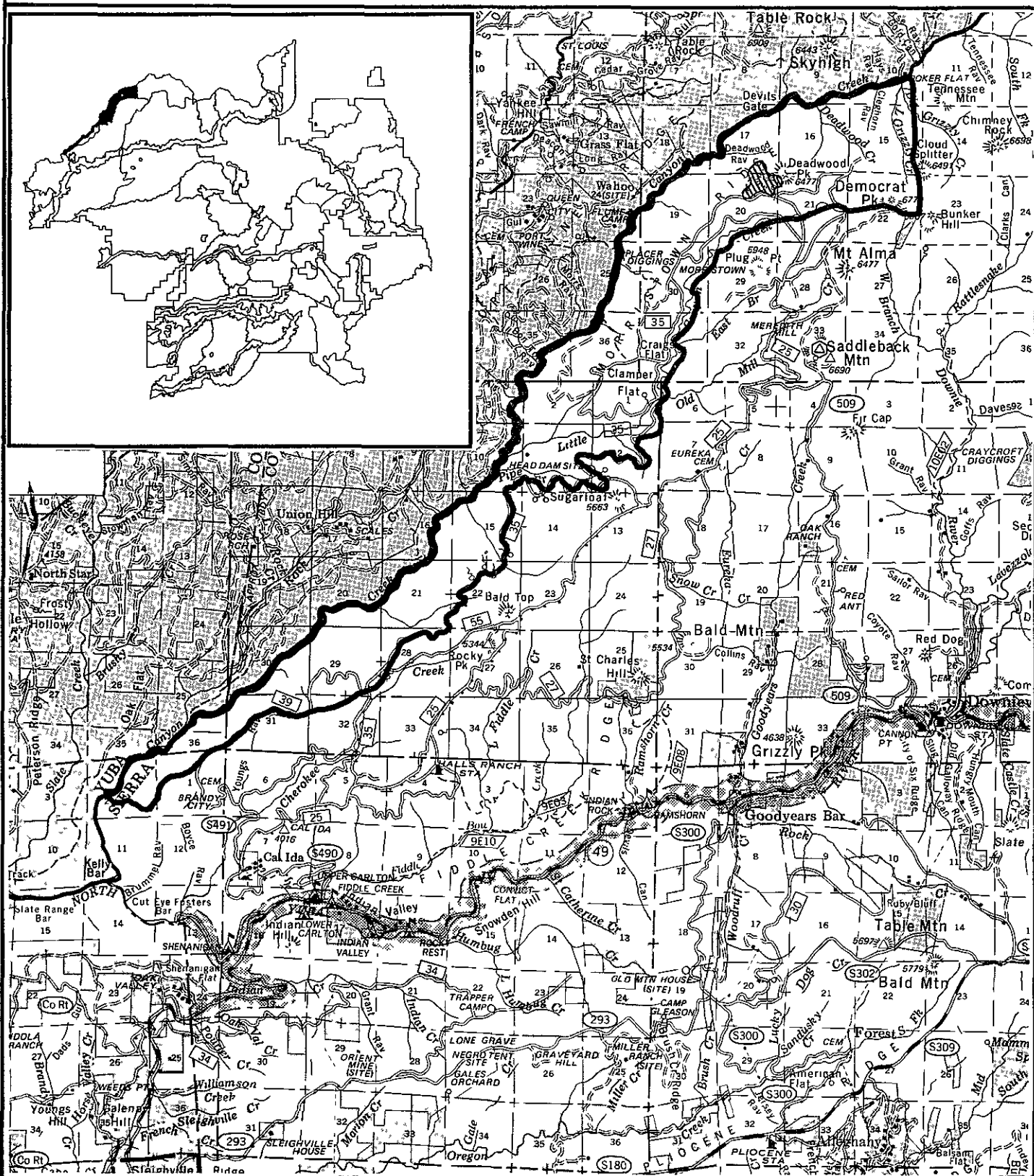
Monitor effectiveness of cultural resource protection.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices.

MANAGEMENT AREA 006

CANYON

T20N, R9E



006 CANYON

10,074 GROSS ACRES

10,074 NET ACRES

I. DESCRIPTION

This management area (MA) encompasses the Canyon Creek drainage, a major tributary to the North Yuba River. It includes the McMorristown Ridge and borders the Cal-Ida MA on the east and Sunnyside MA on the north. The area borders the United States National Forest to the west. The area's topographic relief is characterized by steep slopes on the west and north. Elevations range from 2,400 feet along Canyon Creek to 6,779 at Democrat Peak.

Seventy-five percent of the area is accessed, however, much of the roaded portion is 4-wheel-drive roads and unsuited for timber haul.

The McMorristown and Bunker Hill Diggings are located within the management area.

There are 174 acres of wetlands. A large inventory of mature timber stands is located on the inaccessible steep slopes above Canyon Creek. There is no riparian forest land.

The eastern portion of the area is very scenic and surrounds the Devils Postpile MA. It also includes the historic community of Poker Flat on Canyon Creek.

A portion of the Cherokee-Saddleback Sheep Allotment is in this MA.

The entire area is located on National Forest System land, however, one of the McMahon Group of mining claims has stipulations made regarding surface use and mineral resources.

A deer migration corridor runs along Morristown Ridge.

A portion of spotted owl habitat area D-2 lies within this MA.

Select wildlife species include deer, spotted owl, pileated woodpecker, goshawk, rainbow brook, and brown trout, and the riparian and hardwood groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The present high costs of long span yarding, fuel treatment, and road construction contribute to a complex of timber harvesting concerns.

An opportunity exists to improve wildlife habitat, especially in the deer migration corridor on Morristown Ridge.

The eventual roading and logging of the Canyon Creek area will provide an opportunity to complete the Canyon Creek Bridge, providing a shorter, more economical haul route to market areas.

The opportunity exists to utilize the transitional range created by timber harvesting for domestic livestock.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitional range created by timber harvest.

Emphasize wildlife and watershed values when managing resources in streamside management zones, deer migration corridors, spotted owl habitat areas, and where threatened and endangered species' habitats occur.

The desired future condition for lands intensively managed for timber production is plantations through small sawlog-size stands of the mixed conifer type. Manage these stands on a short rotation schedule of 50 to 120 years. The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention initial VQO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on a short rotation basis. This latter category includes approximately 1,208 acres. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A Recreation Opportunity Spectrum - ~~Roaded~~ natural, except the inner gorge along Canyon Creek, which ~~is semi-primitive motorized~~
- B. Visual Quality Objective - Modification Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have herein been assigned the modification VQO. Partial retention for high elevation variety class A lands and partial retention for the semi-primitive motorized area
- C Transportation Management Policy - Forestwide Standards and Guidelines apply. Evaluate administrative need for access across Canyon Creek drainage. Analyze feasibility of commodity haul economic benefit.
- D Off-Highway Vehicle Restrictions - Open
- E Forestwide Standards & Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic ~~Cross-Country~~ Skiing
- A4 Open ~~O W~~
- A8 Developed Recreation & Interpretive ~~Service~~ Sites Management, Public Sector

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- ~~C2~~ Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession ~~Vegetation~~ Management
- C6 Midsuccession ~~Vegetation~~ Management
- C7 Late Seral ~~Stage~~ Vegetation Management
- ~~C8~~ Structural ~~Habitat~~ Improvement and Maintenance

- ~~D2~~ Range Management - Permanent Range Type (Extensive ~~Management~~)
- ~~D5~~ Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- ~~D8~~ Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- ~~E2~~ Seed Step Cutting Method
- E3 ~~Overstory~~ Removal Cutting Method
- E4 ~~Intermediate~~ Cutting - ~~Existing~~ Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- ~~E10~~ Artificial Stand ~~Reestablishment~~
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water ~~Resource~~ Improvement
- F4 ~~Soils~~ Resource Improvement

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasable
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleable

- J1 Land ~~Adjustments~~ - ~~Retain~~ and Acquire

- L1 Timber Access Road Development - Road ~~Construction/Reconstruction~~
- ~~L2~~ ~~Multiresource~~ Road Access Development - Road ~~Construction/Reconstruction~~
- L4 Trail ~~Construction/Reconstruction~~ - Foot & Equestrian Traffic Only
- ~~L5~~ Trail ~~Construction/Reconstruction~~ - Foot, Equestrian, and Trailbike
- ~~L8~~ Transportation Management, Roads - Open
- ~~L9~~ Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

- L12 Transportation Management, Trails - Open
- L13 ~~Transportation~~ Management, Trails - Restricted Use

P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Manage high elevation scenic areas to retain their visual character

Develop a spotted owl management plan for SOHA D-2

VII. SPECIFIC MONITORING AND EVALUATION

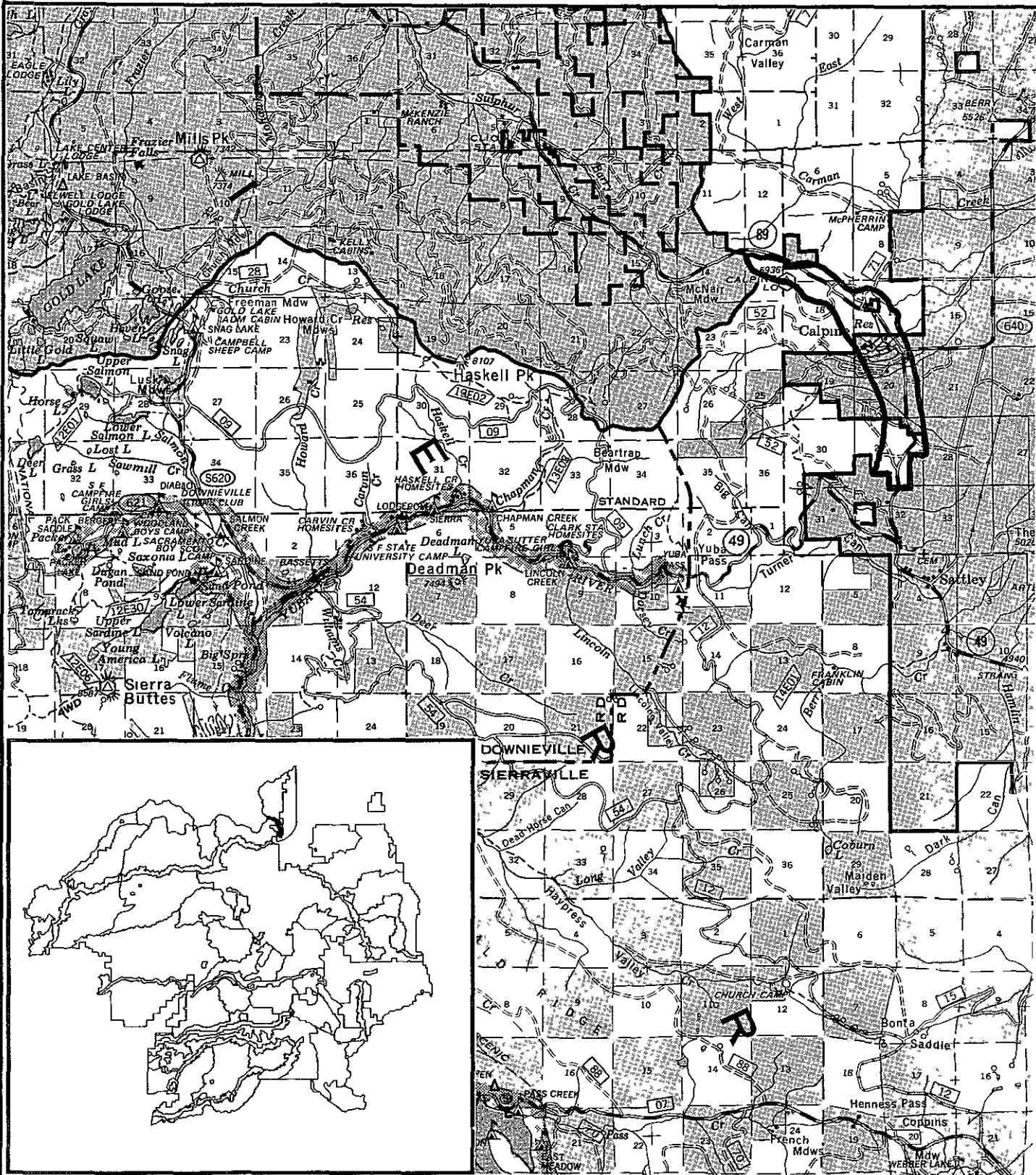
None.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 007

CALPINE

T21N, R14E



007 CALPINE

680 GROSS ACRES

680 NFS ACRES

I. DESCRIPTION

This management area (MA) is a corridor of land along Highway 89, which begins approximately 1.25 miles north of Sattley, Caldonia, and extends northwest to the Tahoe/Plumas National Forest boundary. A small area of foreground viewing is within the Carman watershed. Elevation is from 4,960 to 5,440 feet.

Highway 89 is a main travel route between Sierraville and Quincy. A Sierra County Zoning Ordinance 'Scenic Highway' applies to the highway right-of-way. The ordinance emphasizes preservation of existing scenic quality.

Beckwourth Sheep Grazing Allotment is in the area.

The community of Calpine (an historic logging town), located in the management area, has a potential for property boundary trespass problems. The community has a special-use permit for a water storage reservoir above town.

A portion of spotted owl habitat area H-1 lies within this MA.

There are 28 acres of wetlands. There are 23 acres of unsuitable productive timberland.

The selected emphasis species is mountain quail.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

A concern is property development trespass.

Visual quality is also a concern, as indicated by the County ordinance of 'Scenic Highway.' Highway 89 is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

III. RESOURCE MANAGEMENT EMPHASIS

The primary management emphasis is to maintain or enhance visual quality as seen from Highway 89.

Use special cutting practices to retain a predominantly natural landscape.

Emphasize maintaining continuous forest cover. Use the grass areas and stringer meadows for forage production.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural
- B Visual Quality Objective - Retention.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Designated routes only
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A5 Restricted OHV
- A18 Visual Resource Travel Route Viewshed Planning

- C5 Early Succession Vegetation Management

- D1 Range Management - Permanent Range Type (Intensive Management)
- D7 Range Improvement - **Nonstructural** (Permanent and Transitory)
- D8 Range Improvement - **Structural** (Permanent and Transitory)

- E7 **Special Cutting**
- E10 **Artificial Stand Reestablishment**
- E11 **Natural Stand Reestablishment**
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- G5 Minerals Management - **Saleables**

- J2 Land Adjustments - **Limited**

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 **Multiresource** Road Access Development - Road Construction/
Reconstruction
- L8 Transportation Management, Roads - Open
- L9 **Transportation** Management, Roads - **Regulated Use**
- L10 **Transportation** Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

- P5 Fire protection - **Visual**, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Survey and post National Forest System boundary lines. **Protect** visual qualities using the retention **visual quality objective**. Prepare a visual **resource** travel route viewshed plan to **identify** the means of achieving the desired visual quality. Propose withdrawal from **mineral** entry and **leasing** for 200 feet from **centerline** along Highway 89

Develop a spotted **owl** management plan for SOHA H-1

VII. SPECIFIC MONITORING AND EVALUATION

Monitor the area for **trespass**

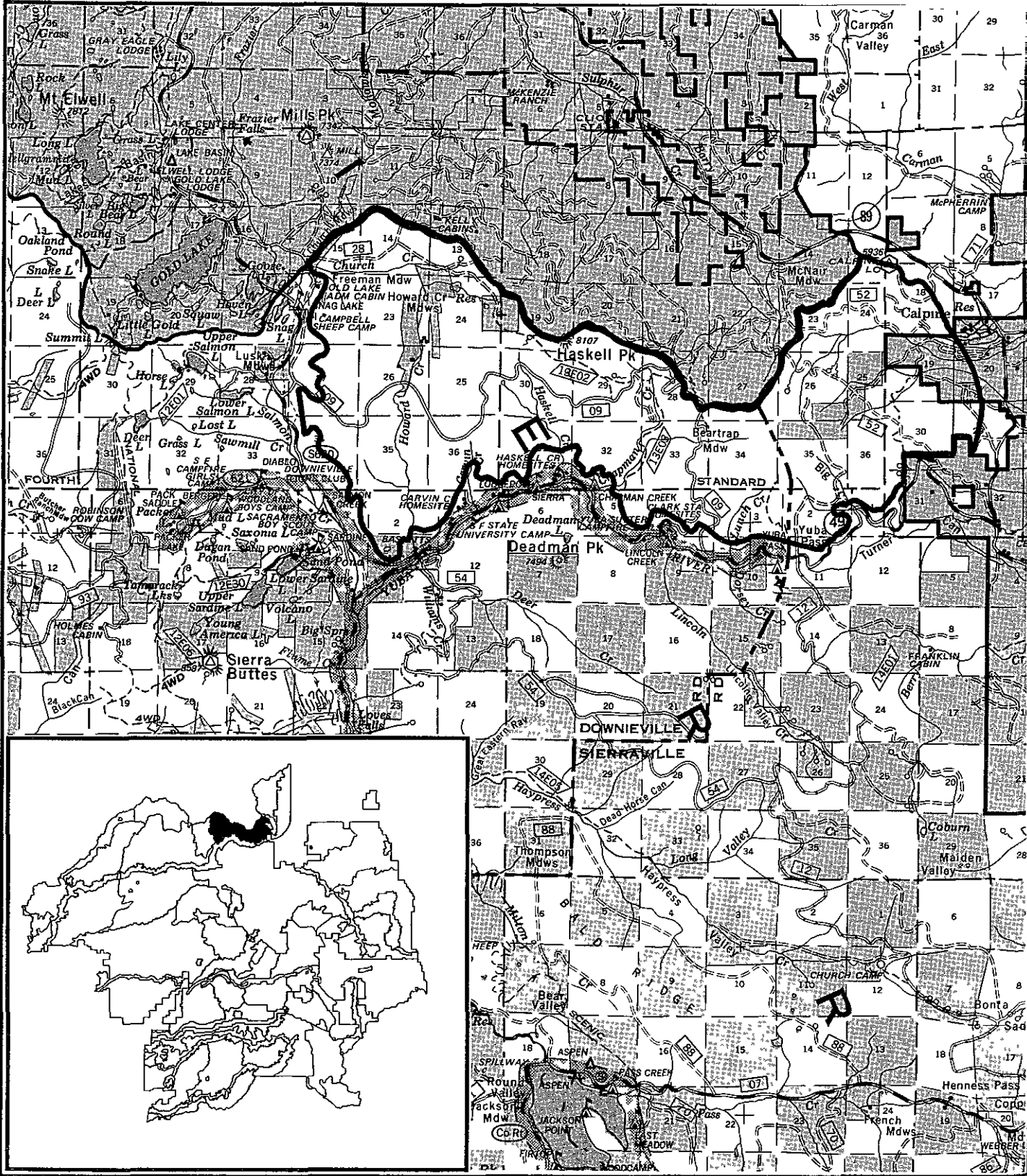
Cooperate with the community in **identifying** a new water source that will eliminate the **special-use permit**.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to **complete Descriptions of** Management Practices in Chapter V

MANAGEMENT AREA 008

CHAPMAN

T21N, R13E



008 CHAPMAN

16,597 GROSS ACRES

15,403 NFS ACRES

I. DESCRIPTION

This management area (MA) is bordered by the foreground view zone of the Gold Lake Highway on the west and the town of Calpine on the east. The southern boundary runs parallel to Highway 49. The Plumas National Forest forms the northern limits of the area. The area contains portions of the Sierraville and Downieville Ranger Districts. Elevations range from 5,200 to 8,000 feet. Aspects are generally southerly. Slopes are moderate on the ridges and steep in the drainages. Howard, Carvin, Haskeii, Chapman, Fletcher, and Big Canyon Creeks form the principal drainages. Fletcher Creek provides the municipal water supply for the town of Calpine, and Carvin and Haskeii Creeks are used for domestic water supply by downstream homesites.

Vegetation is predominantly true fir with mixed conifer at the lower elevations. Large brushfields are competing with conifers and several large meadows. Extensive riparian areas are associated with many drainages. There are 1,316 acres of wetlands. Many of the soils in this area are composed largely of decomposed granitics.

The Chapman Creek Trail follows Chapman Creek for a distance of 2 1/2 miles. The Haskeii Peak trail provides trail access to the upper elevations of the area. Both trails receive moderate use during the summer.

The area has an extensive road system. Many of the roads are used for snowmobiling and cross-country skiing in the winter. Mining activities occur on some private and National Forest System lands. The Haskeii Peak Cattle Allotment and portions of the Howard Creek and Beckworth Sheep Allotments are within this area. The selected emphasis species are deer, pileated woodpecker, spotted owl, goshawk, rainbow and brook trout, and the riparian meadows and wetlands groups. This area provides excellent summer deer range.

Portions of spotted owl habitat areas G-2, G-3, and H-1 lie within this management area.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 49 and the Gold Lake Highway. Highway 49 is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

There is a concern for maintaining water quality in streams used for domestic purposes in the Haskeii Creek and Carvin Creek summer home tracts as well as the Calpine area. Protection of wetlands within the area from such uses as OW, mining, and road construction is a major concern.

There is a concern for being able to achieve reforestation stocking standards near or in areas with heavy pocket gopher populations.

The existence of old-growth timber stands indicates the potential for spotted owl nesting areas. The location of these areas will affect other management activities.

Opportunities exist to improve wildlife habitat and domestic livestock forage through timber harvest practices and management of riparian habitat.

There is an opportunity for expanding cross-country skiing and snowmobiling.

III. RESOURCE MANAGEMENT EMPHASIS

A major resource emphasis is regulated intensive even-age timber management. Emphasize range management for transitory range created by timber harvesting.

Unscheduled timber harvest may be practiced on lands unsuited for timber production such as existing recreation development sites, special-use permit areas, etc.

Emphasize wildlife and watershed values when managing streamside management zones, spotted owl management areas, and where threatened and endangered species' habitats occur. Emphasize coordinated management in the Highway 49 and Gold Lake Highway middle grounds to maintain a predominantly natural landscape.

Manage the watersheds of Fletcher, Carvin, and Haskeil Creeks for timber while emphasizing maintenance of water quality. Manage brushfields not capable of producing commercial humber and meadows for range and wildlife forage production.

The desired future condition for lands intensively managed for humber production is plantations through small sawlog-size stands of the mixed conifer type. Manage these stands on a short rotation schedule of 50 to 120 years. The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention initial VCO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on a short rotation basis. This latter category includes approximately 2,255 acres. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum • Rooded natural
- B Visual Quality Objective - Partial retention in middleground as viewed from Highway 49 and Gold Lake Highway. Partial retention for foreground along the Haskell Peak and Chapman Creek Trails. Modification for the remainder of the area
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply
- D. Off-Highway Vehicle Restrictions • Designated routes only, summer. Open to over-the-snow in winter except area near Yuba Pass where travel confined to designated mules only
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A3 Commercial Nordic Cross-country Skiing
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector

- C1 Stream Fisheries - Nonstructural improvement and Maintenance
- C2 Stream Fisheries - Structural improvement and Maintenance
- C3 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat improvement and Maintenance
- C9 Wet Meadow Habitat improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D2 Range Management - Permanent Range Type (Extensive Management)
- D4 Range Management - Transitory Range Type (Intensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Spacial Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F3 Flow Timing Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G3 Minerals Management - ~~Leasables~~
- G5 Minerals Management - ~~Saleables~~

- J1 Land Adjustments - Retain and Acquire

- L1 ~~Timber Access~~ Road Development - Road **Construction/Reconstruction**
- L2 ~~Multiresource~~ Road Access Development - Road **Construction/ Reconstruction**
- L3 Trail **Construction/Reconstruction** - Foot Traffic Only
- L4 Trail **Construction/Reconstruction** - Foot & Equestrian Traffic Only
- L5 Trail **Construction/Reconstruction** - Foot, Equestrian, and Trailbike
- L6 Trail **Construction/Reconstruction** - *Special Requirements*
- L7 FA&O **Construction/Reconstruction**
- L8 **Transportation** Management, Roads - Open
- L9 ~~Transpotation~~ Management, Roads - Regulated Use
- L10 ~~Transpotation~~ Management, Roads - Closed
- L11 **Transportation** Management, Roads - Obliterated

- P1 Fire Protection - Continuous Fuels
- P2 Fire Protection - High Country Non-Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Protect the wetlands and domestic watersheds in this area and where necessary in Fletcher, ~~Carvin~~, and Haskell Creek drainages.

Continue to encourage dispersed recreation **Identify** winter sports routes ~~originating~~ from Yuba Pass

Provide and designate additional cross-country ski and snowmobile trails. ~~Sign~~ trails to minimize conflicts between users

The VQO of partial retention has been established for the Highway 49 and Gold Lake Highway middlegrounds as well as the foreground along Chapman Creek and Haskell Peak trails to maintain visual quality

Ensure that timber management activities consider reforestation techniques and prescriptions which account for various pocket gopher population levels.

Develop spotted owl management plans for SOHAs G-2, G-3, and H-1.

VII. SPECIFIC MONITORING AND EVALUATION

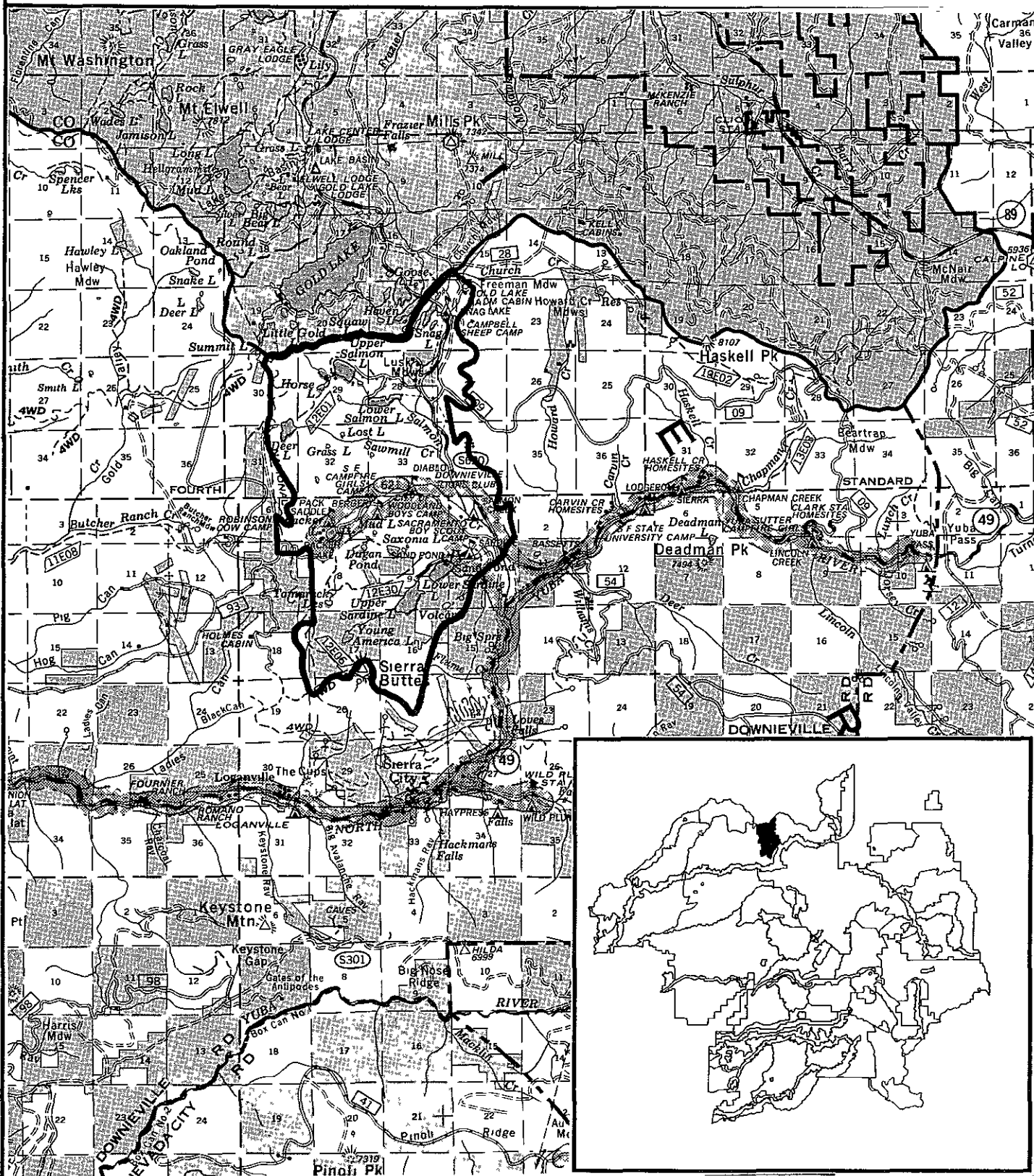
Monitor the water quality of Fletcher Creek.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 009

LAKES BASIN

T21N, R12E



009 LAKES BASIN

8,662 GROSS ACRES

7,231 NFS ACRES

I. DESCRIPTION

This management area (MA) is characterized by high, rocky ridges and peaks, approximately 20 small lakes and ponds, and the Sierra Buttes, a significant landmark near the Sierra Crest. Elevations range from 5,800 feet to 8,587 feet. The area has good access and is suited for both dispersed and developed recreation. The adjacent Plumas National Forest is managed as the 'Gold Lakes Recreation Area.'

There are a number of organizational camps, resorts, and developed campgrounds located near lakes and streams within the area.

Vegetation is characterized by mixed conifer, true fir, and large rubble-filled brushfields.

There are 837 acres of wetlands. There are 7,231 acres of unsuitable productive forest land.

The Pacific Crest Trail is located along the western portion of the area. This area is accessed by Forest Highway #24 and Forest Collector #93.

There has been historic gold mining activity in the area. Many of the lakes were developed for mining purposes.

The Salmon Creek Hydroelectric Diversion Facility is located within the management area.

This area provides excellent summer deer range.

Featured wildlife emphasis species are deer, brown and rainbow trout, and the riparian, meadow, and wetlands groups.

Conflicts between recreational uses and mineral development continue in the management area. Adverse impacts to recreation facilities and conflicts with recreationists may result from mineral development.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

An issue exists concerning potential hydroelectric development of streams and lakes within the MA because of potential degradation of fisheries and visual quality.

The high scenic quality of the entire area requires protection and consideration when proposing any potentially visually damaging activity or use.

The Sierra Buttes lookout is a popular attraction and provides an opportunity to offer interpretive service to the public visitor.

Heavy dispersed camping along waterways, with adverse effects upon the land and recreation resource, has resulted in restricting camping in the Packer Lake-Sardine Lake-Salmon Creek area to developed and designated sites.

Mining along the mineralized portion of Sierra Buttes is a cause for visual concern with regard to the adverse effects it can have on the visual quality.

Opportunities exist to improve deer habitat by burning brush.

Several opportunities exist to improve and develop recreation opportunities for activities such as cross-country skiing and snowmobiling.

III. RESOURCES MANAGEMENT EMPHASIS

The management emphasis for this area is to provide a variety of recreation opportunities consistent with maintaining the high visual quality of the area. Lands acquired or developed for recreational purposes will not be leased for surface mineral entry. Emphasize minerals management to the extent possible without detracting from the adopted visual quality objective or the recreational opportunities existent. This area is unsuitable for regulated timber production.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural except for ~~semi-primitive~~ motomed in the **Sierra Buttes** area
- B. Visual Quality Objective - Retention; however, **partial** retention will **be** allowed for developed **recreation Sites**.
- C Transportation Management **Policy** - Leave open **those** arterial and collector roads necessary for **recreation** management, others will be closed or regulated by **permit**.
- D **Off-Highway Vehicle Restrictions** - Designated routes **only** summer. Open for winter use
- E Forestwide Standards & Guidelines - All apply.
- F Specific Standards & Guideline Not Stated Above - Prepare a winter sports management plan to assure orderly development and management **of** skiing and snowmobiling use

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic ~~Cross-Country~~ Skiing
- A3 Commercial Nordic ~~Cross-Country~~ Skiing
- A4 Open **OHV**
- A5 Restricted **OHV**
- A8 Developed Recreation & ~~Interpretive~~ Service **Sites** Management, Public Sector
- A9 Recreation Management (Private & **Other** Public Sector)
- A11 Recreation or **IS Site** Construction or Rehabilitation
- A13 Development or **Rehabilitation** of Private & Other Public Recreation **Facilities**
- A17 Visual Resource Improvement

- C1 Stream Fisheries - **Nonstructural** Improvement and Maintenance
- C2 Stream Fishenes - structural Improvement and Maintenance
- C3 Lake Fisheries - **Nonstructural** Improvement and Maintenance
- C4 Lake Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- c7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow **Habitat** Improvement and Maintenance

- D2 Range Management - Permanent Range Type (**Extensive** Management)
- D3 Range Management - Transitory Range Type (Extenswe Management)
- D7 Range Improvement - Nonstructural (Permanent and **Transitory**)
- D8 Range Improvement - structural (Permanent and Transltoiy)

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J2 Land Adjustments - Limited

- L2 **Multiresource** Road Access Development - Road **Construction/Reconstruction**
- L4 Trail **Construction/Reconstruction** - Foot & Equestnan Traffic Only
- L6 Trail **Construction/Reconstruction** - Special Requirements
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated **Use**
- L10 Transportation Management, Roads - Closed
- L11 **Transportation Management, Roads - Obliterated**
- L13 Transportation Management Trails - Restricted **Use**
- L14 **Pacific Crest National Scenic Trail** Management

- P2 Fire Protection - High Country Non-Continuous Fuels
- P5 Fire Protection- Visual, High Use, Reservoirs. Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Meet visual **quality objectives** through retention. and partial retention **VQO's** within developed sites

Continue camping restrictions in the Packer Lake-Sardine Lake-Salmon Creek area to developed and designated **sites** only.

Recommend for **withdrawal** from mineral **entry** highly visible and **significant** recreabon areas. Lands acquired for recreational use and visual **quality** protectcton will not be leased for mineral development requiring surface disturbance or conflicting wiilh recreation use.

Prepare a **specific** winter **sports** management plan **to** assure orderly **development** and management of **cross-country** skiing and snowmobiling use within the area

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitor winter sports use of the area to determine management needs This will provide an analysis of the opportunity for **resorts** and **organization** camps to broaden their services to include winter **sports activities**.

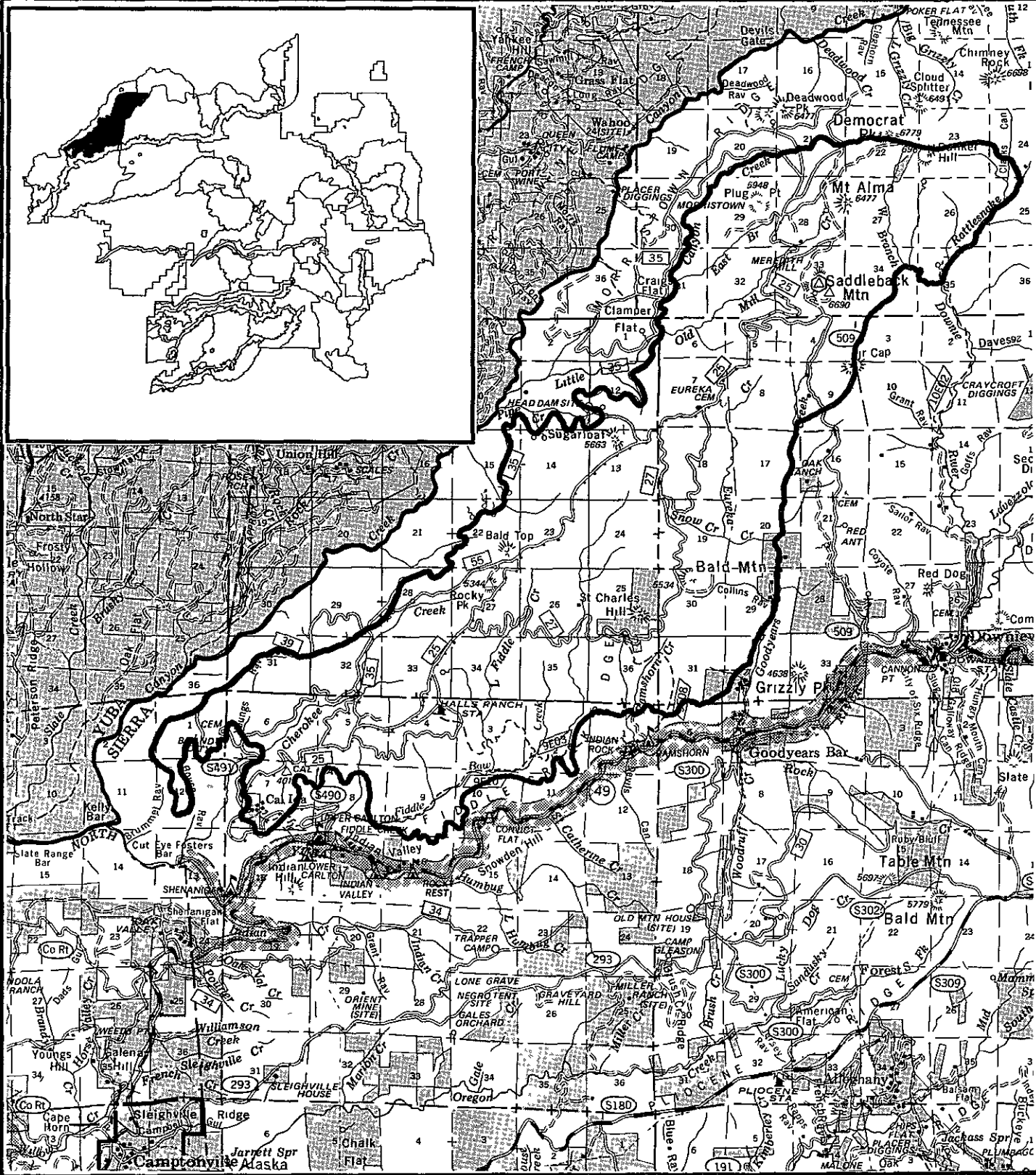
- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

■

MANAGEMENT AREA 010

CAL IDA

T20N, R9E



010 CAL-IDA

27,521 GROSS ACRES

26,836 NFS ACRES

I. DESCRIPTION

This management area (MA) is a high upland plateau bordered on the north by **6,779-foot** Democrat Peak and the south by the **Forty-niner** management area at **1,800** feet elevation

Approximately **80** percent of the area is accessed Cal-Ida Mill. a landmark of this area, was **constructed** in the **1940's**. Remnants of the mill **still** exist at the **site**.

Historically, several thousand people occupied the mining communities of Brandy **City** and Eureka Diggings. Few features remain of the settlements, **but the** eroded slopes of the hydraulic diggings are prominent

The Halls Ranch **administrative** site is centrally located within the area and **is** proposed for study to determine future administrative needs.

Vegetation is **primarily mixed** conifer forest with several expanses of brushfields. The **Sugarloaf** progeny test **site** **is** located within this area. There are **412** acres of wetlands. There are **20** acres of unsuitable **productive** forest land

A **portion** of the **Saddleback-Cherokee** Sheep Allotment **lies** within this area. Saddleback **look-out** is located within **the MA**.

Portions of spotted owl habitat areas **C-2** and **D-3** **lie within** this **MA**.

Featured emphasis species are deer, spotted **owl**, pileated woodpecker, goshawk, rainbow and brook trout, and the riparian, wetlands, and hardwood groups. The area is an important deer migration route **as well as** critical spring, summer, and fall ranges. Fiddle and Cherokee Creeks are important fisheries

The Indian Fire occurred in 1987 **resulting from lightning**. The fire **consumed** approximately **8600** acres **within the** management area and caused **significant** damage to timber and watershed resources

The **Halls Ranch** Trail provides **access** to Fiddle Creek for **recreation**. Trail use **is** light

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The **fuels** backlog in **this MA** is a concern

Upper and **Lower** Brandy **City** and Eureka Diggings are major sources of sediment

The watershed and timber **resource** damage that resulted from the Indian Fire of **1987** **is** a **major** concern.

There **is** an opportunity to improve wildlife habitat and rehabilitate timber and watershed resources in the Indian Fire area

Visual quality **is** a resource management concern within this management area. This concern focuses on lands seen **as** middle ground from Highway **49**. This highway **is** included in **the** Master Plan of State Highways Eligible for Official **Scenic** Highway Designation. Special consideration **is** required to **preserve** the character of **its** scenic backdrop.

There is a concern that dispersed recreation **opportunities** be **maintained** within areas intensively managed for timber, such **as** protecting Halls **Ranch** Trail

There is an opportunity to improve wildlife habitat, especially in the migration corridors for deer.

There **is** a concern for the wildland fire protection where large **continuous** areas of single age **plantation** will develop **as** a result **of** the **1987** Indian Fire.

Fuels profiles resulting from **salvage** logging and fire damaged **vegetation** and trees may form high **in** extreme fire hazard **if left** untreated. There **may be** some **conflicts between** fuels management and protection of other resource values.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated **intensive** even-age timber management. Emphasize range management on the transitory range **opportunities** created by **timber harvest practices**.

Emphasize wildlife and watershed values when managing **streamside** management zones, deer **migration** corridors, spotted owl management areas, and where threatened and endangered species' **habitats** occur.

Unscheduled timber **harvest** may be **practiced on** lands **unsuited** for timber **production** such as existing recreation development sites, special-use permit areas, etc.

The desired future condition for lands intensively managed for timber production is **plantations** through small **sawlog-size** stands of the mixed conifer type. Manage these stands on a short rotation schedule of **50 to 120** years. The desired future condition in red fir and lodgepole **stands** is even-aged **plantations** through large **sawtimber-size trees**. Rotation ages for these stands will be about **150** years. High **elevation** (generally above **5,500**) **mixed** conifer stands in the visually **sensitive** and scenic **areas** (lands with retention **initial VQO's** and variety **class A status**) will be similar in condition to the red fir and lodgepole **stands**. The remaining high elevation **mixed conifer stands** will be managed on a **short rotation** basis. The remaining land **within** the management area will be similar to the present condition.

Maintain low elevation trails and campsites. Project planning **must** consider the recreation experience desired for these trails. Emphasize the rehabilitation of the Indian **Fire area**. Reduce long-term **adverse impacts to wildlife, timber, and watershed values**.

Emphasize fuels management to reduce wildland fire threat in future Indian Fire plantations. Coordinate resource practices to break up areas of hazardous fuel complexes. Make use of **natural breaks, road systems, ridgelines, and existing fire lines**. Maximize utilization of actively created **fuels** where possible.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A **Recreation Opportunity Spectrum** - Roded natural.
- B. Visual **Quality Objective** - Partial **retention** for middle ground of Highway 49. Modification for remainder of the area. Maximum **modification** will be allowed on a **case-by-case** basis. In areas that have a **modification** or maximum modification initial **VQO** and have herein been **assigned** the **modification VQO**.
- C **Transportation Management Policy** - Forestwide **Standards and Guidelines** apply.
- D. **Off-Highway Vehicle Restrictions** - **Open**.
- E **Forestwide Standards & Guidelines** - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 **Nordic Cross-Country Skiing**
- A4 **Open OHV**
- C1 **Stream Fishery - Nonstructural Improvement and Maintenance**
- C2 **Stream Fisheries - Structural Improvement and Maintenance**
- C3 **Early Succession Vegetation Management**
- C6 **Mid-succession Vegetation Management**
- C7 **Late Seral Stage Vegetation Management**
- C8 **Structural Habitat Improvement and Maintenance**
- D2 **Range Management - Permanent Range Type (Extensive Management)**
- D5 **Range Management - Transitory Range Type (Extensive Management)**
- D7 **Range Improvement - Nonstructural (Permanent and Transitory)**
- D8 **Range Improvement - structural (Permanent and Transitory)**
- E1 **Clearcut Cutting Method**
- E2 **Seed Step Cutting Method**
- E3 **Overstory Removal Cutting Method**
- E4 **Intermediate Cutting - Existing Stands**
- E5 **Commercial Thinning - Regenerated Stands**
- E6 **Seed Tree Cutting Method**

- E7 Special **Cutting**
- E10 **Artificial** Stand Reestablishment
- E11 **Natural** Stand Reestablishment
- E12 Tree Imprvment
- E13 Release and Weeding
- E14 **Precommercial** Thinning

- F1 Water **Resource** Improvement
- F2 **Soils Resource** Improvement

- G1 **Minerals** Management - **Locatables**
- G3 Minerals Management - **Leasables**
- G5 Minerals Management - **Saleables**

- J2 Land Adjustments - **Limited**

- L1 Timber Access Road Development - Road **Construction/Reconstruction**
- L2 Multiresource Road Access Development - Road **Construction/Reconstruction**
- L3 Trail **Construction/Reconstruction** - Foot Traffic Only
- L4 Trail **Construction/Reconstruction** - Foot & Equestrian Traffic Only
- L5 Trail **Construction/Reconstruction** - Foot, Equestrian, and Trailbike
- L6 Trail **Construction/Reconstruction** - Special Requirements
- L7 **FA&O Construction/Reconstruction**
- L8 Transportation Management, Roads - **Open**
- L9 Transportation Management, Roads - **Regulated Use**
- L10 Transportation Management, Roads - **Closed**
- L11 **Transportation** Management, **Roads** - **Obliterated**
- L12 Transportation Management, Trails - **Open**
- L13 Transportation Management, Trails - **Restricted Use**

- P1 Fire Protection - **Continuous** Fuels

VI. PROPOSED RESOLUTION OF ISSUES, CONCERNS, AND OPPORTUNITIES

Coordinate management in the Highway 49 middle ground to maintain a predominantly natural landscape. The partial **retention** VQO established for the Highway 49 middle ground ensures that natural **scenic** quality is maintained.

Insure that project planning **identifies** measures necessary to maintain **visual quality** needed for the **desired experience** on **system** trails.

Develop **fuels** management plan for the Indian Fire **area**. Develop **fuel modification** measures that **incorporate** other resource management and **silvicultural** programs. **Design** fuel management practices that use cost effective methods and **maximize** **utilhabon opportunities**.

Develop a spotted **owl** management plan for SOHAs D-2 and D-3.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitor the **fishery** resource in **relation** to the amount of shade reduced by **Umber vegetative** manipulation **practices**

Monitor SRI backlog reduction.

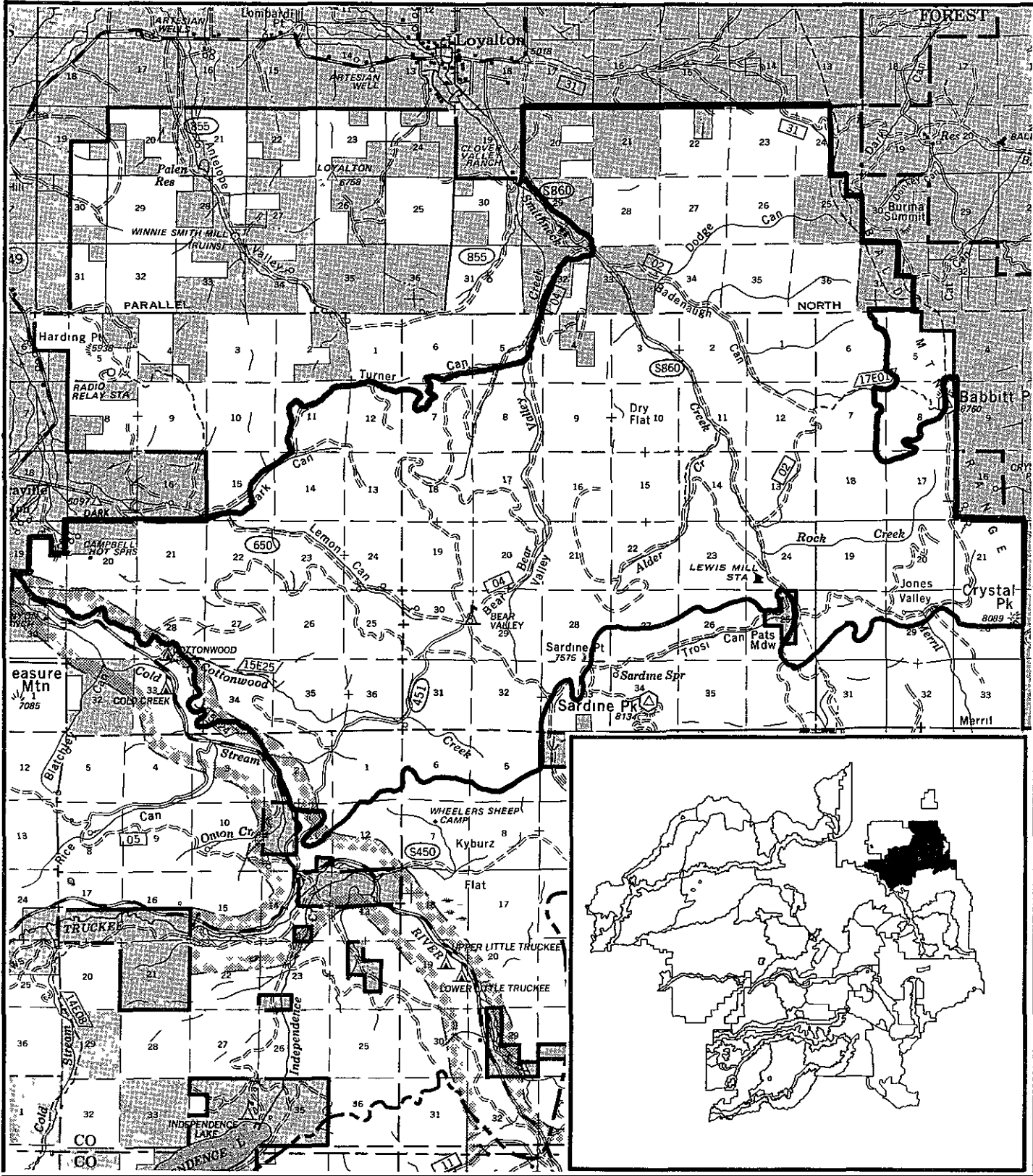
Evaluate the Upper and Lower Brandy **City** and Eureka Diggings, which are part of the **restoration** backlog.

- 1/ Refer to Resource Support Element Maps and **Forestwide** Standards and Guidelines
- 2/ **Refer** to complete **Descriptions** of Management Practices in Chapter V.

MANAGEMENT AREA 011

SMITHNECK

T20N, R16E



011 SMITHNECK

44,691 GROSS ACRES

41,061 NFS ACRES

I. DESCRIPTION

This management area (MA) lies southeast of Loyalton and is bordered by the Tolyabe National Forest on the east and by the Eighty-Nine management area (MA 19) on the west. The southern boundary is from Crystal Peak on the east side to Little Truckee Summit on the west. Elevations vary from about 5,000 feet in the Sierra Valley at the northern boundary to about 8,800 feet at Babbitt Peak. The area was extensively railroad logged during the early part of this century. Many of the railroad grades are still evident today.

A powerline parallels the Smithneck drainage. Mineral exploration has occurred throughout the Bear Valley and Lemon Canyon area.

The MA is used for military maneuvers by units stationed in California and Nevada.

There is an extensive transportation system in this area, much of it under the jurisdiction of Sierra County. Located in this MA are the following: one developed campground (Bear Valley), one system trail (Badenaugh), designated 4WD route, and numerous areas that are utilized as dispersed recreation sites during hunting and fishing seasons. Also in this MA are the Lewis Mill Guard Station in the southeast portion of this area and the Babbitt Lookout on the eastern border adjoining the Tolyabe National Forest.

As a result of past fires (primarily the Coldstream Fire of 1959), a significant number of acres of eastside pine forest type were changed to permanent range. A significant number of brushfields have been converted to plantations. There are 745 acres of wetlands. There are 3,592 acres of unsuitable productive forest land.

Portions of the Smithneck, Bear Valley, and Kyburz grazing allotments are within this MA.

Watershed restoration structures (check dams) have been constructed in Bear Valley and Lemon Canyon to treat gully erosion in meadows. This erosion was caused by past railroad logging practices.

The northern portion is deer winter range, and much of the MA serves as a deer migration corridor for the Truckee-Loyalton Deer Herd. The selected emphasis species are deer, mountain quail, rainbow and brown trout, and the wetlands, riparian, and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 89. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop. The old growth pine is a critical concern along Lemon Canyon road from the junction of Dark Canyon road on the east end to the junction of the Sardine Peak road on the west end.

There are concerns about impacts on grazing and wildlife if the Smithneck Road is improved. There is a concern to retain winter deer habitat.

A concern is the economically optimum amount of wood and forage production on sparsely stocked eastside pine stands (less than 20 percent crown closure). How should those acres be treated that have been considered permanent range in the range allotment management process and also considered as part of the reforestation backlog?

Other management concerns include to what extent the road closures for wildlife management should be continued; cultural resource sites, and the coordination of grazing in plantations.

Opportunities exist to develop OHV routes through the area and to develop cooperative trails adjacent to the community of Loyalton: to improve both range and wildlife forage production, to reduce meadow erosion through treatment of stream channels; to identify cultural interpretive sites; to improve interdeer range and migration corridors, and for closer coordination with Sierra County in a joint venture to improve the Smithneck Road.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource management emphases are regulated intensive **even-aged timber** production on suitable timber sites and forage production on permanent and transitory range. Intensively **manage** sparsely stocked eastside pine stands for forage production to increase the range carrying **capacity**. **Unscheduled** timber harvest may be practiced on lands unsuited for timber production, such as **existing** recreation development **sites**, **special-use permit** areas, rangeland conversion areas, etc.

Emphasize wildlife and watershed values when managing streamside management zones and where threatened and endangered species' **habitats** occur. **Emphasize** coordinated management in the Highway 89 middleground to maintain a **predominantly** natural landscape. **Emphasize** deer when proposing **activities** in critical deer winter range.

The desired future condition for lands intensively managed for **timber** is plantation through **medium-size sawlog stands** in the eastside forest type. Manage plantations for rotation ages of **80 to 150** years. **Maintain** the areas managed for forage as **grass, forb, and brush** plant community. These areas will be accessed for **Intensive** range and timber management **activities**. The **remaining** lands within the management area will be similar to their **present** condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - **Roaded** natural.
- B. Visual **Quality** Objective - **Partial** retention in foreground of Smithneck Creek Road, Lemon Canyon Road, Badenaugh Trail, and middleground of Highway 89. Modification for the remainder of the area.
- C. Transportation Management Policy - **Forestwide** Standards and Guidelines apply. Smithneck Road is **classified** as a Forest Highway (FH #126). Any construction **proposal** would be made in conjunction with Sierra County and the Federal Highway Administration.
- D. Off-Highway Vehicle Restrictions - Open except for designated routes only in Bear and Jones Valleys for protection of winter deer range and watershed research protection.
- E. Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic **Cross-Country** Skiing
- A4 Open **OHV**
- A5 Restricted **OHV**
- A8 Developed **Recreation &** interpretive Service Sites Management, Public Sector

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage **Vegetation** Management
- C8 Structural **Habitat** Improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D4 Range Management - Transitory Range Type (Intensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)
- D9 **Range/Scattered** Eastside Pine

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 **Overstory** Removal Cutting Method
- E4 **Intermediate** Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 **Artificial** Stand Reestablishment
- E11 Natural Stand Reestablishment
- E12 Tree Improvement
- E13 Release and Weeding

- E14 Precommercial Thinning
- F1 Water Resource Improvement
- F2 Water Yield Improvement
- F4 Soils Resource Improvement
- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables
- J1 Land Adjustments - Retain and Acquire
- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike
- L7 FBO Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management Trails - Open
- L13 Transportation Management, Trails - Restricted Use
- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Cooperate with Sierra County in a cooperative transportation plan for Smithneck, Lemon Canyon, and Badenaugh Roads.

Develop and implement a management strategy to preserve old growth pine along Lemon Canyon Road

Provide seasonal and permanent road closures to protect wildlife habitat during critical periods of deer migration and winter use. Pursue continued cooperation with the California Department of Fish and Game and local sports groups in efforts to close unnecessary roads that interrupt or distract deer migrations and winter use.

Coordinate all grazing use with management objectives in plantations include concern and management strategy in grazing allotment plans

Cooperate with OHV and other trail user groups in identifying and developing trail systems for all types of users

Implement water resource and soil resource improvement practices to improve gullied stream channels and restore meadows.

Standard streamside management zone cutting practices will maintain aesthetic qualities along Smithneck Creek. The partial retention VGO established for the Highway 89 middle ground ensures that natural scenic quality is maintained

VII. SPECIFIC MONITORING AND EVALUATION

Monitor effectiveness of coordinated grazing in plantations

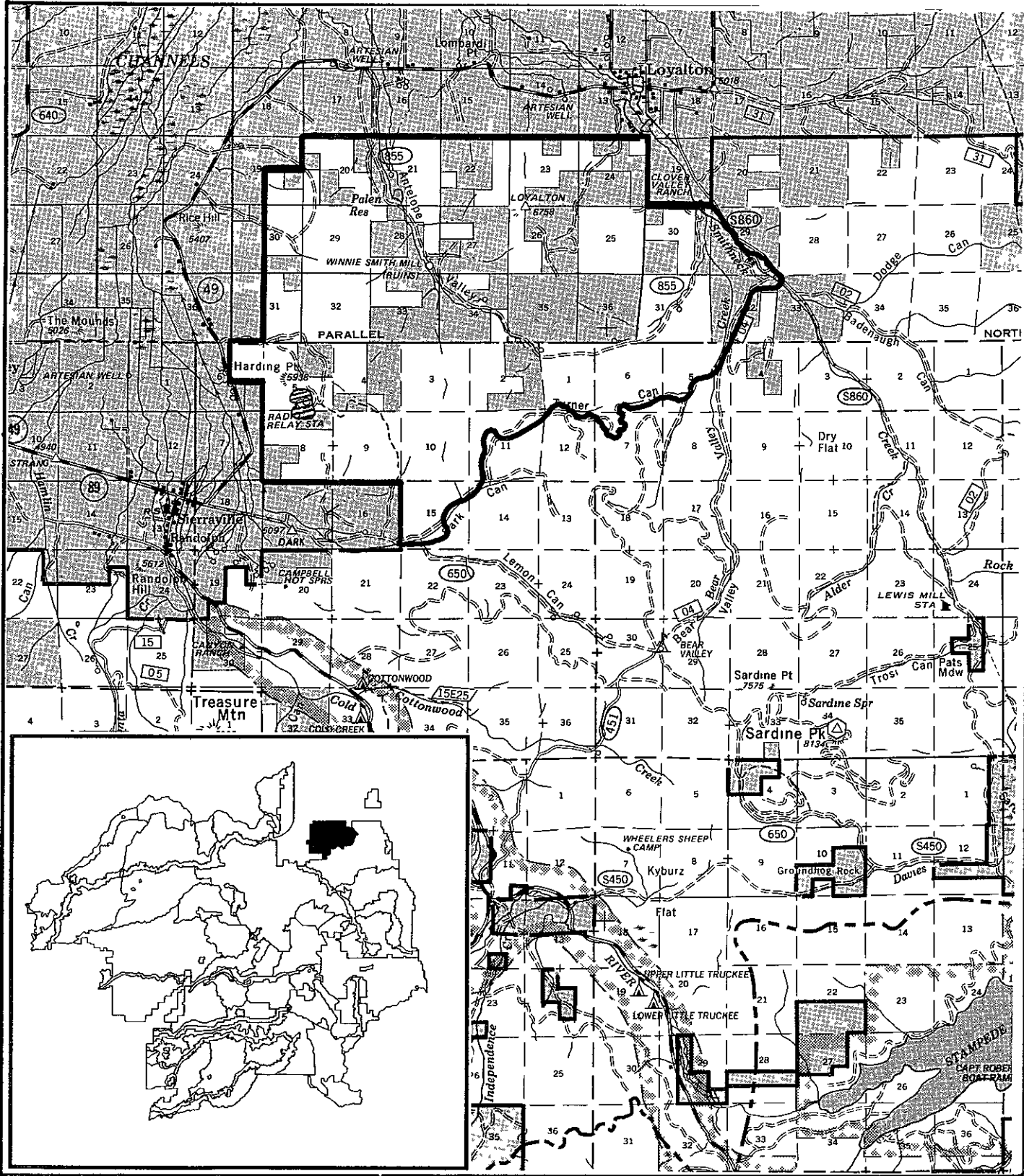
Monitor and evaluate the site potential of sparsely stocked eastside pine stands and the reforestation backlog acres for production of wood and forage outputs.

- 1/ Refer to complete Descriptions of Management Practices in Chapter V.
- 2/ Refer to Regional Standards and Forestwide Standards and Guidelines

MANAGEMENT AREA 012

ANTELOPE

T20N, R15E



012 ANTELOPE

18,929 GROSS ACRES

11,624 NFS ACRES

I. DESCRIPTION

This management area (MA) is located between the towns of Sierraville and Loyalton. The Tahoe National Forest boundary forms the northern and western boundaries, Dark Canyon and Turner Canyon form the southern boundary, and Smithneck Creek and Lower Bear Valley Creek form the eastern boundary. The central feature in the MA is Antelope Valley. The lowest elevation is at the mouth of Antelope Valley, at just under 5,000 feet. The valley is flanked by high ridges reaching up to 6,850 feet.

The lower slopes are vegetated with grass, forbs, and shrubs (primarily bitterbrush, sagebrush, Ceanothus, and manzanita). Stream sides have aspen, willow, and alder. Midslopes have Jeffrey pine and juniper with grass-brush understories. The higher slopes have juniper, Jeffrey pine, white fir, incense-cedar, and mountain mahogany. There are 79 acres of wetlands. There are 857 acres of unsuitable timber land.

This MA is critical deer winter range. The deer wintering here are in the Sierra Valley Subunit of the Loyalton-Truckee Deer Herd. The California Department of Fish and Game manages approximately 4,500 acres of State land within this management area for deer winter range. These State lands make up a substantial portion of the management area. The MA is used heavily by migrating deer. A Coordinated Resource Management Plan (CRMP) covering Antelope Valley was completed in 1985, which involved private, State, and Federal landowners. This CRMP was prepared to improve the deer herd habitat conditions.

The management area has been grazed by both sheep and cattle since the early 1900's. The management area covers all of the Harding Point and Antelope Cattle Allotments, part of the Bear Valley Cattle Allotment, and part of the vacant Loyalton Allotment. The Sierra Brooks Subdivision is adjacent to this MA.

The Antelope Valley was explored and mined for copper in the 1860's through the early 1900's. The Antelope Mine, on adjacent private land, is a remnant of that mining period. There has been renewed interest in the mineral potential in this area, including exploratory drilling and submittal of a mining plan of operation. The area was logged in the late 1800's and early 1900's. The Winnie Smith Mill ruin in the Antelope Valley was one of the local mills that processed this timber.

In 1959, the Coldstream Fire burned into Dark Canyon and over the ridge tops into Antelope Valley. There are about 100 acres of reforestation needs.

A fenced pond for the Loyalton Mill is under a special-use permit. In this area, additional water storage is needed for fire protection. The Antelope Valley Road is a county road.

Active erosion is occurring adjacent to Antelope Creek. This was caused by poor distribution of cattle in the past and by poor alignment of the Antelope Valley Road.

The selected emphasis species are deer, mountain quail, and the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Cattle grazing in the Antelope Valley may be causing some conflict with the deer that winter there.

The California Department of Fish and Game, the Sierra County Fish and Game Commission, and the Sierra Valley Sportsmen's Club have proposed closing (both permanently and seasonally) several roads in the management area. Part of the area is also closed to snowmobile use during the winter. The above actions are being undertaken to reduce stress on wintering and migrating deer. Some local people feel these areas should be left open, without restrictions (to hunt, collect firewood, etc).

The California Department of Fish and Game lands are within the Antelope Valley Cattle Allotment. The State has a different grazing permit system than the Forest Service. Coordination of grazing management is needed.

Erosion is a concern along **some areas** of Antelope Creek and **adjacent meadows**.

There is a concern for cultural **resource inventories** and **priorities**.

Visual **quality** is a **critical** resource management concern **within this management area**. This concern focuses on lands **seen as middleground** from Highway 89. This highway **is** included in the **Master Plan** of State Highways Eligible for **Official Scenic Highway Designation** and **thus** requires **special consideration** to **preserve** the character of its scenic backdrop.

There is an **opportunity** to increase the carrying capacity for **wintering and migrating mule deer** within the management area through coordination and direct **habitat** improvement.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to **maintain or increase** the carrying capacity for mule deer. Coordinate **cattle** grazing, streamside **restoration** practices, and **timber** management with wildlife.

The desired future **condition** is improved deer winter range, improved **cattle distribution**, and a mosaic of **uneven-aged** timber stands, **brushfields**, and **meadows**.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Roaded natural.
- B. Visual Quality Objective - Partial retention for middleground of Highway 89, modification for the remainder **of the area**. Maximum modification will be allowed on a **case-by-case** basis in areas that have a **modification** or **maximum** modification initial VQO and have **herein** been assigned the **modification** VQO.
- C. Transportation Management Policy - Stabilize and close **those** roads not needed for **resource** management.
- D. Off-Highway Vehicle Restrictions - Closed to **all motorized vehicle use**, including **over-the-snow vehicles**, from November 1 - May 1 during the critical wildlife **life** cycle. Designated **routes** only in summer **season**. This restriction **can** be amended **if** weather conditions are **such** that deer are not on the winter range.
- E. Forestwide Standards and Guidelines - All **apply**.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A5 Restricted OHV
- A6 Closed OHV

- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C8 Structural Habitat improvement and Maintenance

- D1 Range Management - Permanent Range Type
- D4 Range Management - **Transitory** Range Type
- D7 Range improvement - **Nonstructural** (Permanent and Transitory)
- D8 Range Improvement - **Structural** (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 **Seed Step Cutting** Method
- E3 **Overstory** Removal Cutting Method
- E4 intermediate Cutting - **Existing Stands**
- E5 Commercial Thinning - Regenerated Stands
- E6 **Seed Tree** Cutting Method
- E7 Special Cutting
- E6 **Uneven-Age Cutting** Method
- E10 **Artificial Stand** Reestablishment
- E11 **Natural Stand** Reestablishment
- E13 **Release** and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource improvement

- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- Lt Timber Access Road Development - Road Construction/Reconstruction
- L9 Transportation Management - Road - Limited Use
- L10 Transportation Management - Roads - Closed
- Ltt Transportation Management - Roads - Obliterated

- Pt Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Develop a coordinated resource management plan with the BLM, Soil Conservation Service, private ranchers, and the California Department of Fish and Game to address the grazing, forest, and wildlife issues.

Manage the winter deer range to provide a 60/40 forage-cover mixture.

Use more intensive range management practices to protect Antelope Creek and reduce grazing conflicts.

Use OWS to reduce closures to ease the road use issue. Coordinate closures with the Sierra Nevada Fish and Game Commission, Sierra Valley Fish and Game Club, Sierra Nevada Fish and Game Club, California Department of Fish and Game and other user groups to reduce the fire closure issues.

Manage timber for long-term production to achieve the desired wildlife habitat objectives.

Manage the Highway 89 middleground to maintain a predominantly natural landscape.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor the success of erosion control measures.

Monitor all mining exploration and operation activities to protect wildlife and cultural resource values.

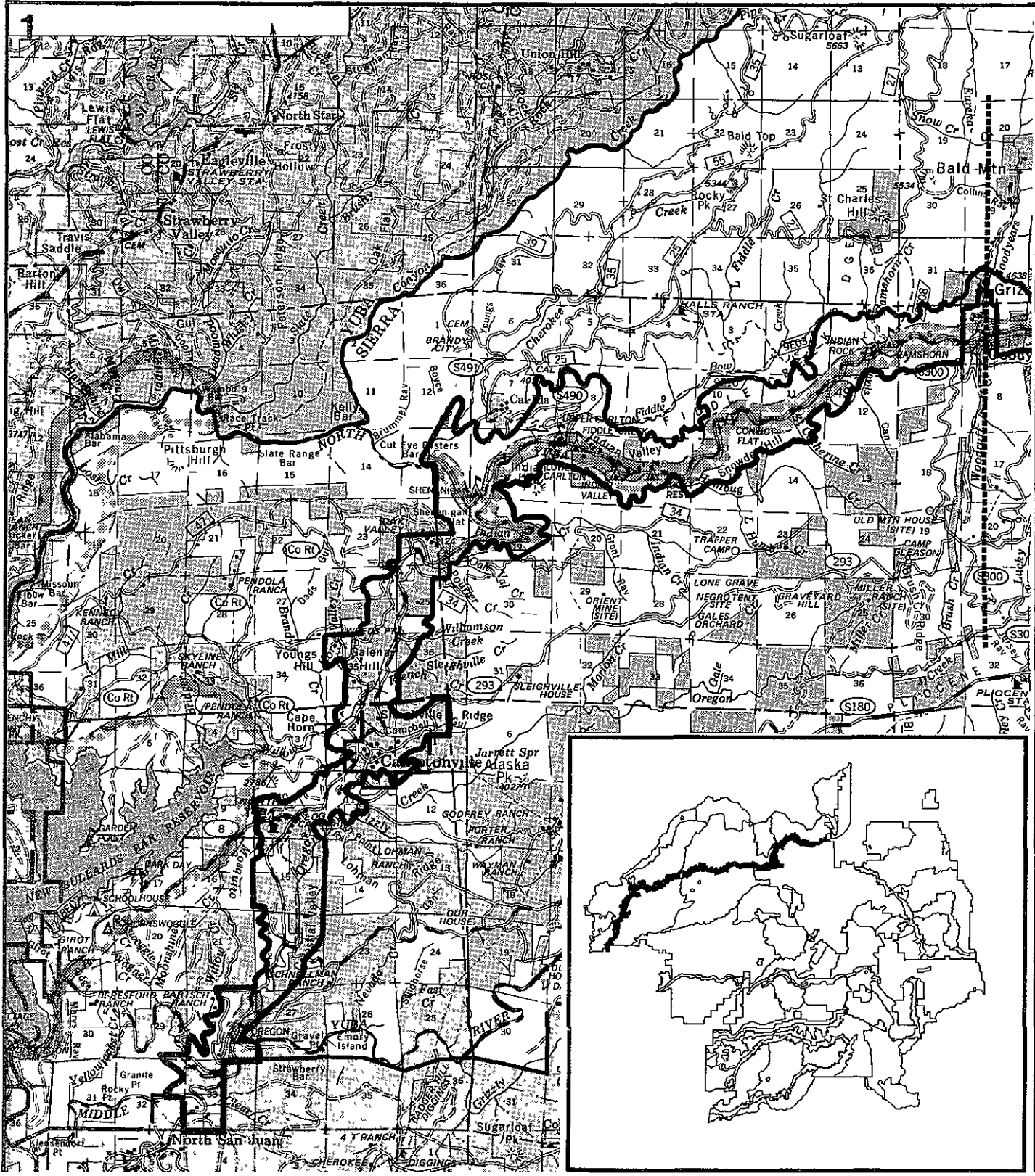
The partial retention VQO established for the Highway 89 middleground ensures that natural scenic quality is retained.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete list of Non-Point Source Practices in Chapter V

MANAGEMENT AREA 013

FORTY-NINER

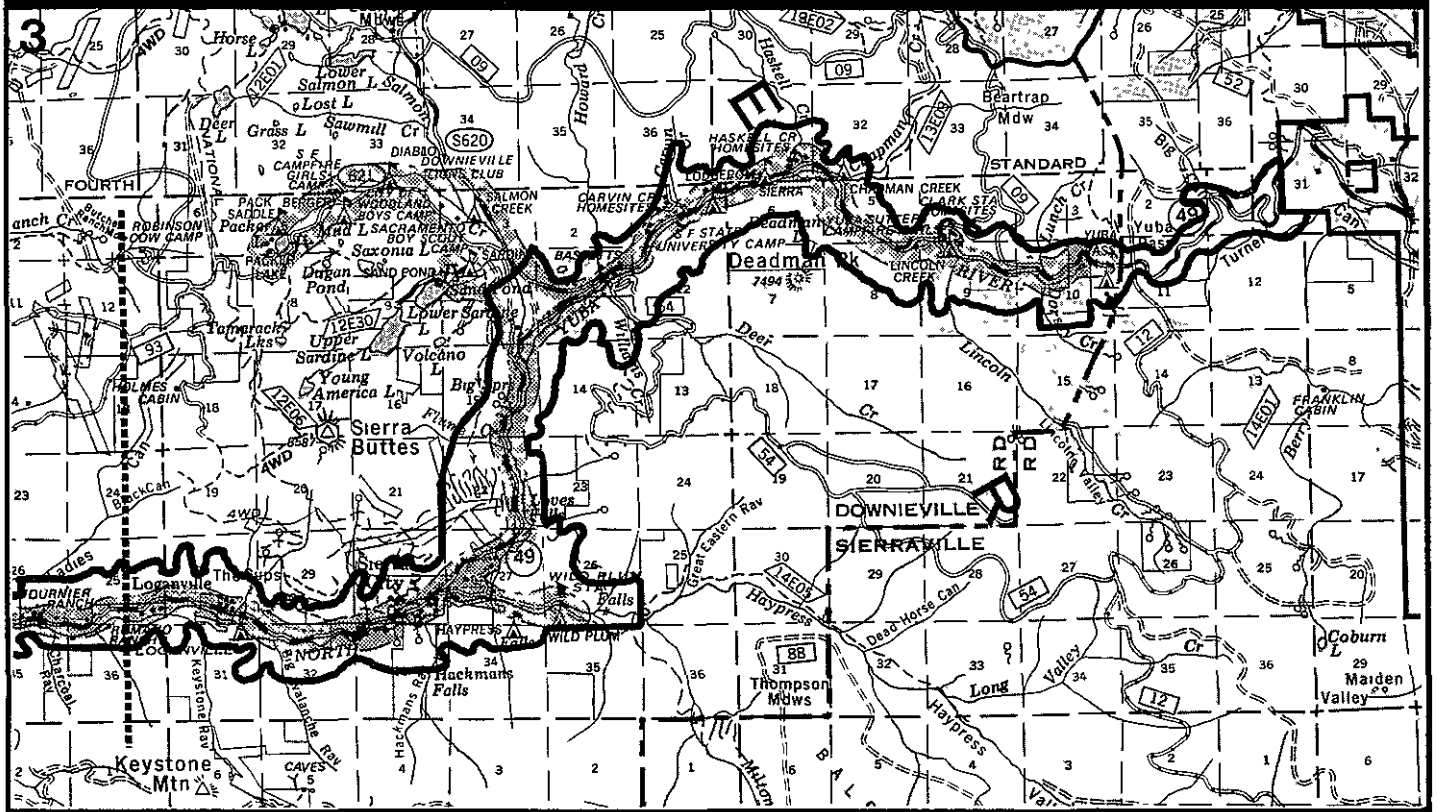
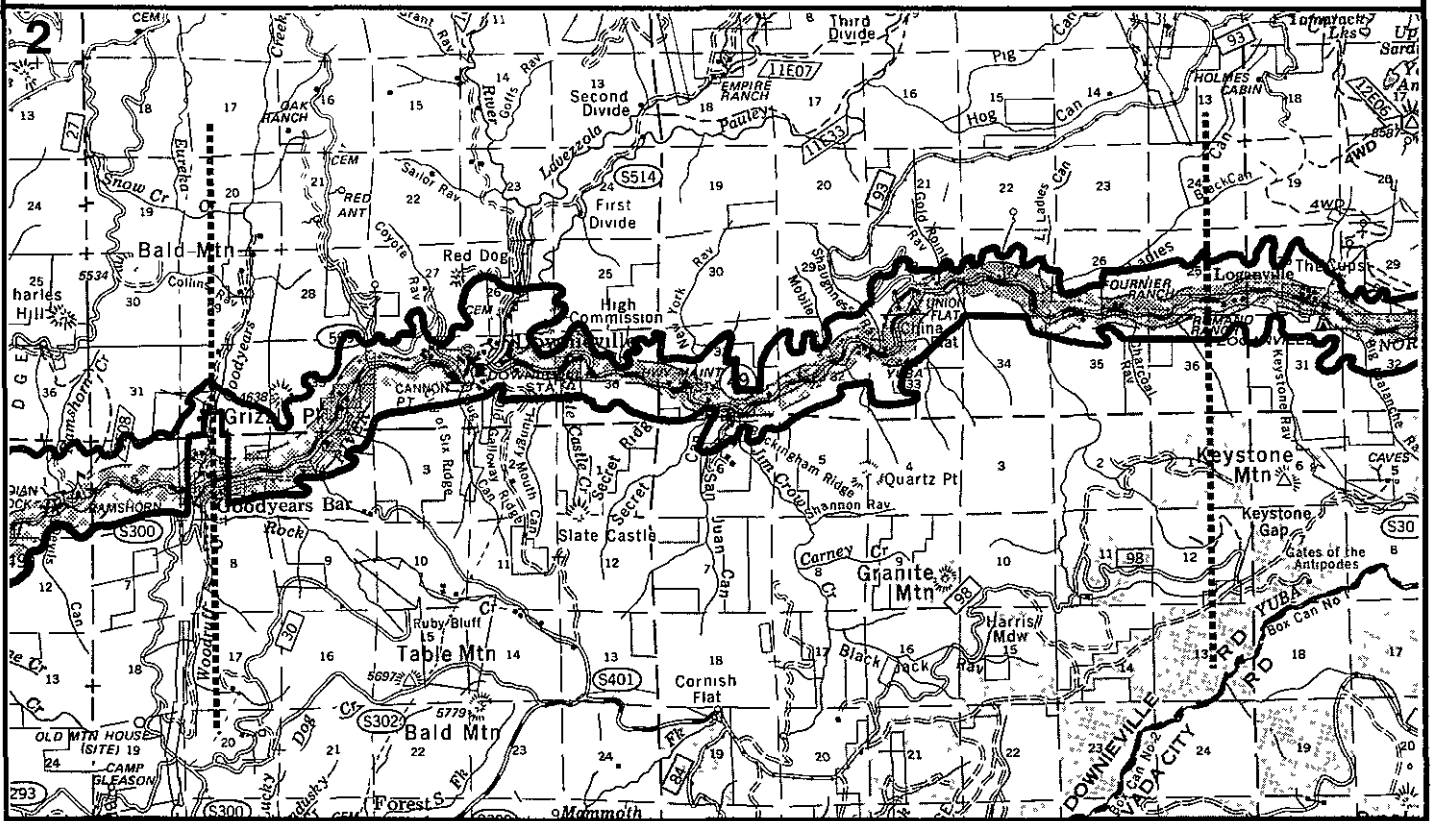
T19N, R10E



MANAGEMENT AREA 013

FORTY-NINER

T19N, R10E



013 FORTY-NINER

21,553 GROSS ACRES

15,710 NFS ACRES

I. DESCRIPTION

This management area (MA) includes the land along Highway 49 from North San Juan to Sattley that is visible or directly influenced by the traveling public and Forest visitor. The lateral boundaries extend from a short sight distance to approximately 1/2 mile along each side of the traveled route. Elevations range from 1500 feet on the Middle Yuba River to 6700 feet at Yuba Pass.

The route travels through the communities of Camptonville, Downieville, and Sierra City, and terminates just west of Sattley. Approximately 2/3 of the route parallels the North Yuba River. Scenery within the area is outstanding and characterized by heavy forested uplands near Camptonville to steep river canyons with forested mountain backdrops along the North Yuba River.

The river canyon provides opportunities for contemporary outdoor recreation uses including gold panning and sluicing. Commercial white-water rafting occurs on the North Yuba River under special-use permit. Dredging/mining operations blanket mining claims from Indian Valley to Sierra City. A portion of the Willow Creek Cattle Allotment is within this MA.

The river provides an important sport fishery, with brown and rainbow trout being key emphasis species for this area. Also included in this MA are selected emphasis species of pileated woodpecker, deer, bald eagle, spotted owl, and the riparian group. The MA contains key winter deer range.

Five separate summer home tracts on National Forest System land representing 100 separate homeowners are located within this MA. Also, an organization camp and an education center are located in the upper elevations of this area. The Pacific Crest Trailhead is located directly east of Sierra City. Fourteen developed recreation sites are within this MA, with recreation oriented toward overnight use at developed campgrounds and day use/dispersed use on the remainder.

Portions of six spotted owl habitat areas A-1, A-2, B-2, G-2, G-3, and H-1 lie within this MA.

There are 510 acres of wetlands. There are 6,369 acres of unsuitable productive forest land.

The Yuba Pass area serves as a trailhead for dispersed winter recreation. The state has developed a Sno-Park area there which is plowed by Caltrans.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Visual quality is a resource management concern in this management area. The concern focuses on views seen from Highway 49. This highway is included in the Master Plan of State Highways Eligible for World Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop. Private lands and communities within the view area are covered under separate zoning and use regulations by Sierra County. Yuba County does not have similar regulations.

The conflict between authorized gold dredging, recreation, and visual resources will continue to be an issue. Complete resolution of this conflict without total abolition of mining along the river is not possible under existing law and regulations. There are many who strongly oppose the withdrawal of the river area from mining.

Heavy dispersed camping along the North Yuba River and adjacent to the Oregon Creek day use area, which severely impacted resources, has resulted in restricting camping there to developed and designated sites only.

The Highway 49 alignment is located on highly unstable slopes. Major work is required each year to repair and stabilize slides and road failures. A concern exists to ensure progressive improvement of this alignment consistent with management objectives for this area.

An opportunity exists to further develop Yuba Pass and other areas above 4,500 feet for winter sports activities.

In order to provide an opportunity for the general public to participate in recreational mining activities, and protect the existing recreational resources and opportunities, additional recreational withdrawals in the vicinity of developed campgrounds should be proposed.

111. RESOURCE MANAGEMENT EMPHASIS

Emphasize scenic and visual qualities while providing a broad spectrum of recreation opportunities. Maintain high water quality in the North and Middle Yuba River: coordinate all resource uses and activities in the area

Permit special harvest cutting on suitable timber lands throughout the area

Propose withdrawal from mineral entry and leasing those areas not already withdrawn in the Indian Valley, Ramshorn, and other river areas near developed campgrounds and proposed developments where recreational and mining demand conflicts are greatest

Emphasize Yuba Pass for winter sports activities.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A. Recreation Opportunity Spectrum • Roaded natural except for a small portion of semi-primitive motorized in the Sierra Buttes area
- B. Visual Quality Objective - Retention, however, partial retention will be allowed for developed recreation sites
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D. Off-Highway Vehicle Restrictions - Designated routes only
- E. Forestwide Standards & Guidelines • All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A3 Commercial Nordic Cross-Country Skiing
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- A17 Visual Resource Improvement
- A18 Visual Resource Travel Route Viewshed Planning

- C1 Stream Fisheries Nonstructural Improvement and Maintenance
- C2 Stream Fisheries Structural improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 structural Habitat Improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement • Nonstructural (Permanent and Transitory)
- D8 Range Improvement • Structural (Permanent and Transitory)

- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management • Locatables
- G2 Minerals Management • Locatable Withdrawals
- G3 Minerals Management • Leasables
- G4 Minerals Management • Leasable Withdrawals
- G5 Minerals Management • Saleables

- J2 Land Adjustments - Limited
- L1 Timber Access Road Development • Road **Construction/Reconstruction**
- L2 Multiresource Road Access Development • Road **Construction/Reconstruction**
- L3 Trail **Construction/Reconstruction** • Foot Traffic Only
- L4 Trail **Construction/Reconstruction** • Foot & Equestrian Traffic Only
- L5 Trail **Construction/Reconstruction** -Foot, Equestrian, and Trailblke
- L6 Trail **Construction/Reconstruction** • Special Requirements
- L7 FA80 **Construction/Reconstruction**
- L8 Transportatron Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 **Transportation** Management, Roads - Closed
- L11 Transportation Management, Roads - Obllterated
- L12 Transportatron Management, Trails - Open
- L13 Transportation Management, Trails - Restrcted Use
- L14 Pacific Crest National Scenic Trail Management

- P5 Fire **Protection** -Visual, High Use, **Reservoirs**, improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Visual quality objective is retention, however, moddication will be allowed on a caseby-case basis when necessary to meet recreation **objectives**

Limit timber harvest activities to 'special cutting'

Resolution of conflicts wth mining end dredging along the North Yuba River require withdrawal of mineral **entry** from all developed reoreation sites **as** well as areas wth signdicant recreation use. Propose withdrawal of lands along the rver in Indian Valley from the North Fork bridge east to section 15, ail lends along the river at Ramshorn in the SE 114 of section 1, and **any** newly **acquired** lands, **or** other lands providing a **significant** recreation resource

To maintain existing water quality and manage the qually fishery will require close project coordination and mltigation wth those activities **with potential** to cause damage

Continue **restrictions** along the North Yuba Rwer and adjaoent to the Oregon Creek day use **area** to provide **camping** in developed and designated **sites** only.

Resolution of **stability** problems associated wth alignment along Highway 49 will be coordinated wth the California Department of Transportation when **reconstruction projects** ere submitted for review

To provide adequate recreation access and distribution along the North Yuba River, certain actions will be required. The **Pacific Crest Trailhead** will need to be developed in coordination wth the State and County, snowmobile and cross-country skiing **trailheads** will be identified and developed **as** funding is available Consider opportunities to develop **whitewater "trailheads"** between Downieville and Indian Valley

A visual resource travel route viewshed plan will be prepared to **identify** the specdic means of achieving the desired visual quality.

Develop spotted **owl** management plans for **SOHAs** A-1, A-2, **B-2**, G-2, **G-3**, and H-1.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

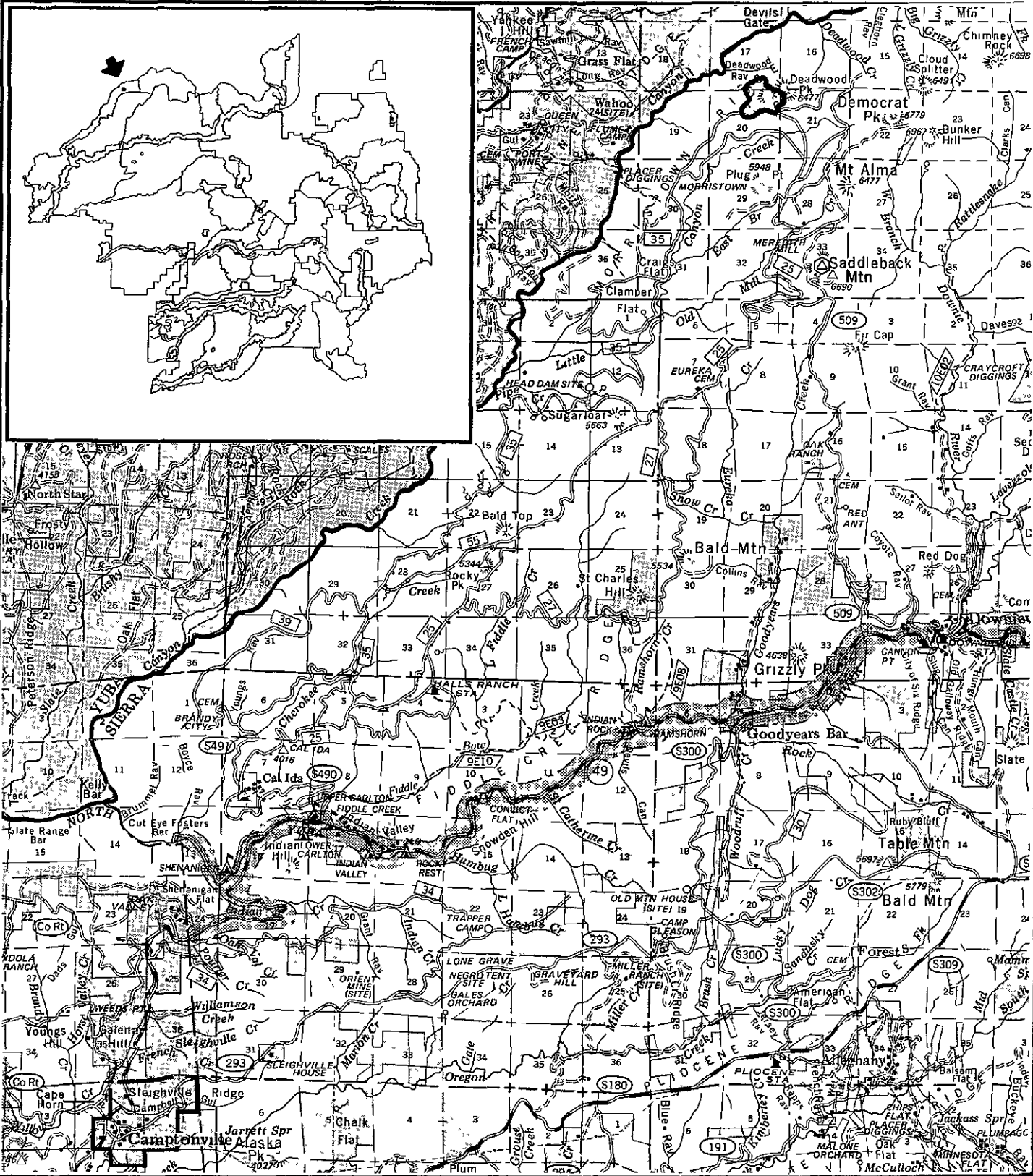
None.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descnpbons of Management Practices in Chapter V

MANAGEMENT AREA 014

DEVILS POSTPILE

T21N, R10E



014 DEVILS POSTPILE

69 GROSS ACRES

69 NFS ACRES

I. DESCRIPTION

This management area (**MA**) is located on Deadwood Peak near the Tahoe-Plumas National Forests boundary. **The** main feature is a geologic formation known as Devils Postpile. This is a large vertical pillar of basalt rock that rises above the surrounding landscape.

This **MA** is classified as the Devils Postpile Geologic Area (**SIA**).

The area is accessed by a primitive road, although there are no roads within the **MA** itself.

There are no fish or wildlife emphasis species.

There is no mining activity within the **MA**, although adjacent areas contain active claims and old diggings. **There** are no wetlands. There are 32 acres of unsuitable productwe forest land.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

A management concern has been to inventory and protect Special Interest Areas containing geologic, ecologic, or cultural features. The Devils Postpile has previously been identified as having an outstanding and unique geologic formation for this area of the Sierra Nevada. No geologic areas have been classified on the Tahoe National Forest. The Devils Postpile appears to be qualified for designation as a Geologic Area under 36 CFR 294.1.

The land within the management area is open to mining under the mining laws.

III. RESOURCE MANAGEMENT EMPHASIS

Manage the **MA** to protect the geologic features. Through procedures outlined in FSM 2361. Complete an implementation plan including the identification of exact boundaries.

Roads or overnight recreational facilities will not be permitted in this **MA**.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Semi-primitive nonmotorized.
- B. Visual Quality Objective - Preservation.
- C. Transportation Management Policy - No road construction permitted.
- D. Off-Highway Vehicle Restrictions - Closed.
- E. Forestwide Standards and Guidelines - All apply except 25, 26, and 31.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A6 Closed OHV
- A15 Special Interest Area Investigations and Management

- G1 Minerals Management - Locatable
- G2** Minerals Management - Locatable Withdrawals
- G4 Minerals Management - Leasable Withdrawals

- J1** Land Adjustments - Retain and Acquire

- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection - Visual, High Use, Reservoirs and Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

This **MA** has been classified as the Devils Postpile Geologic Area pursuant to Title 36, CFR 294.1 (a) and the authority vested in the Regional Forester by the Chief, Forest **Service**

After field evaluation, map boundaries of the Devils Postpile Geologic Area and include in the implementation Plan for the Geologic Area

Protect and preserve the unique features of this **MA**. Plan appropriate visitor interpretive **services**. Cooperate with universities for research and study of the area

Withdraw from mineral entry those lands classified as the Devils Postpile Geologic Area

VII. SPECIFIC MONITORING AND EVALUATION

Forest **Service** and universities may monitor for research purposes

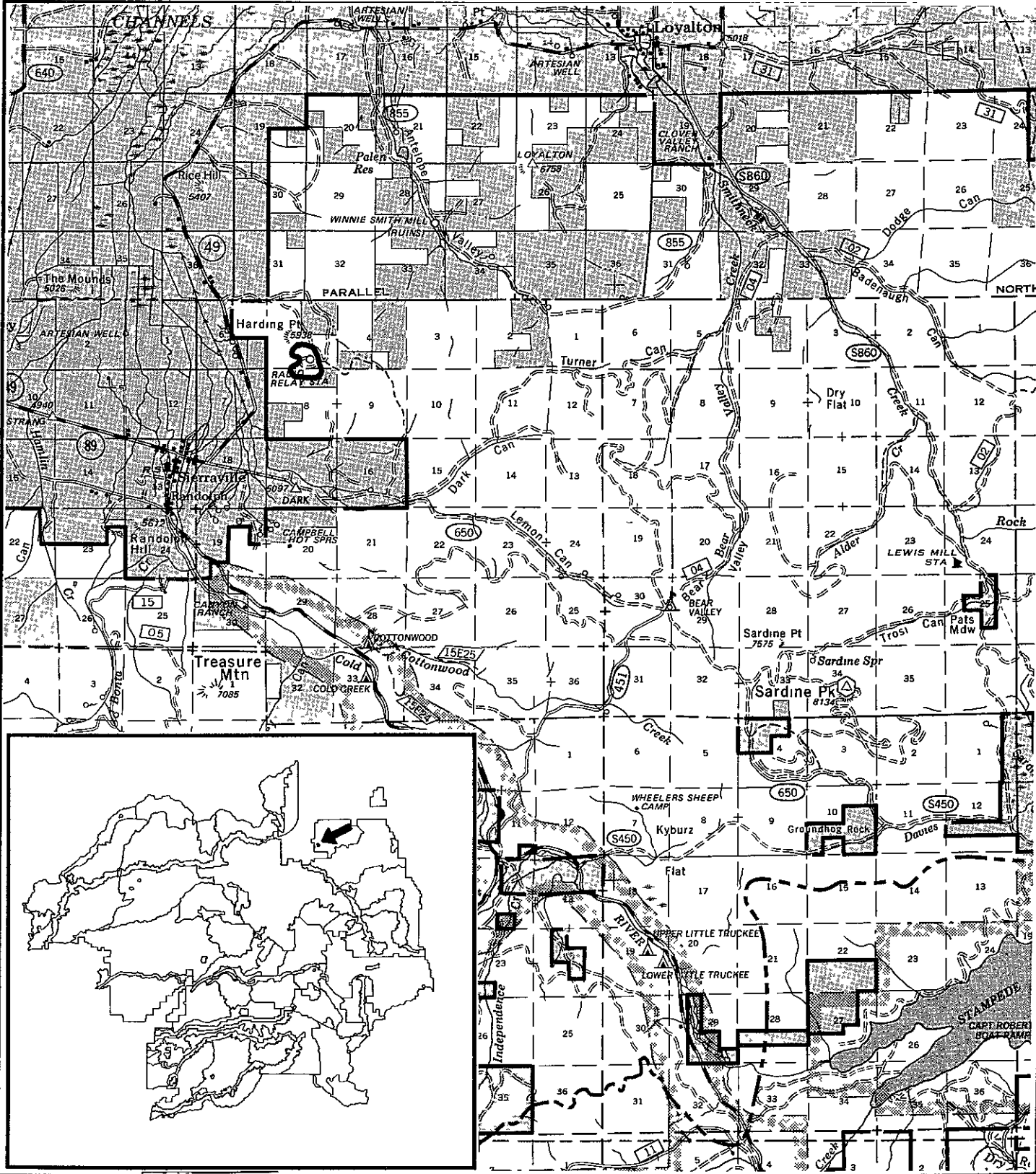
Monitor recreation use to determine disturbance in the area

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 015

HARDING

T20N, R15E



015 HARDING

32 GROSS ACRES

32 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 2.5 miles northeast of Sierraville. Presently, a **NV** repeater is located in the management area that provides the Sierraville community with **NV** reception. The elevation of the area is approximately 5,900 feet.

Historically, the surrounding area was logged and used for livestock grazing. These practices continue today. This **MA** is within the Harding Point Grazing Allotment.

The area is accessed by unimproved roads which cross private, Bureau of Land Management and National Forest System (NFS) lands.

The vegetation consists primarily of eastside pine timber stands with a patchy understory of brush and grass. There are no wetlands or selected emphasis species. There are 32 acres of **unsuitable** productive forest land.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is an opportunity to concentrate compatible electronic uses of NFS land at this and other approved electronic sites.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is use as an electronic site. Permits will require that facilities minimize visual impact. Consider compatibility of uses when evaluating applications for special-use permits. Incompatible electronic uses will not be permitted to occupy the site, give preference to existing uses. This MA is unsuited for regulated timber production.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Roaded natural.
- B. Visual Quality Objective - Modification This VQO allows management activities to **dominate** the characteristic landscape, however, structures and roads should remain visually subordinate when viewed in the background. To meet these requirements in some cases will require significant efforts at visual mitigation and project-level involvement of the Forest landscape architect. Some areas, however, might require very little mitigation to **satisfy** the modification objective. Where proposed installations in this latter category are in a visually prominent location, maximum practical mitigation will still be implemented even if the resultant visual quality will exceed the Objective. In other words, the modification VQO will be applied as the base **level** or minimum acceptable visual quality.
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D. Off-Highway Vehicle Restrictions - Closed.
- E. Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A6 Closed OHV
- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- J2 Land Adjustments - Limited
- L9 Transportation Management, Roads - Regulated Use
- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The electronic site plan provides guidelines and direction for management and use of the area. Revise and update this plan for new development and as needed. The Forest Service and the Federal Communications Commission will evaluate all new applications for compatibility with existing uses. Deny permits to incompatible frequencies.

VII. SPECIFIC MONITORING AND EVALUATION

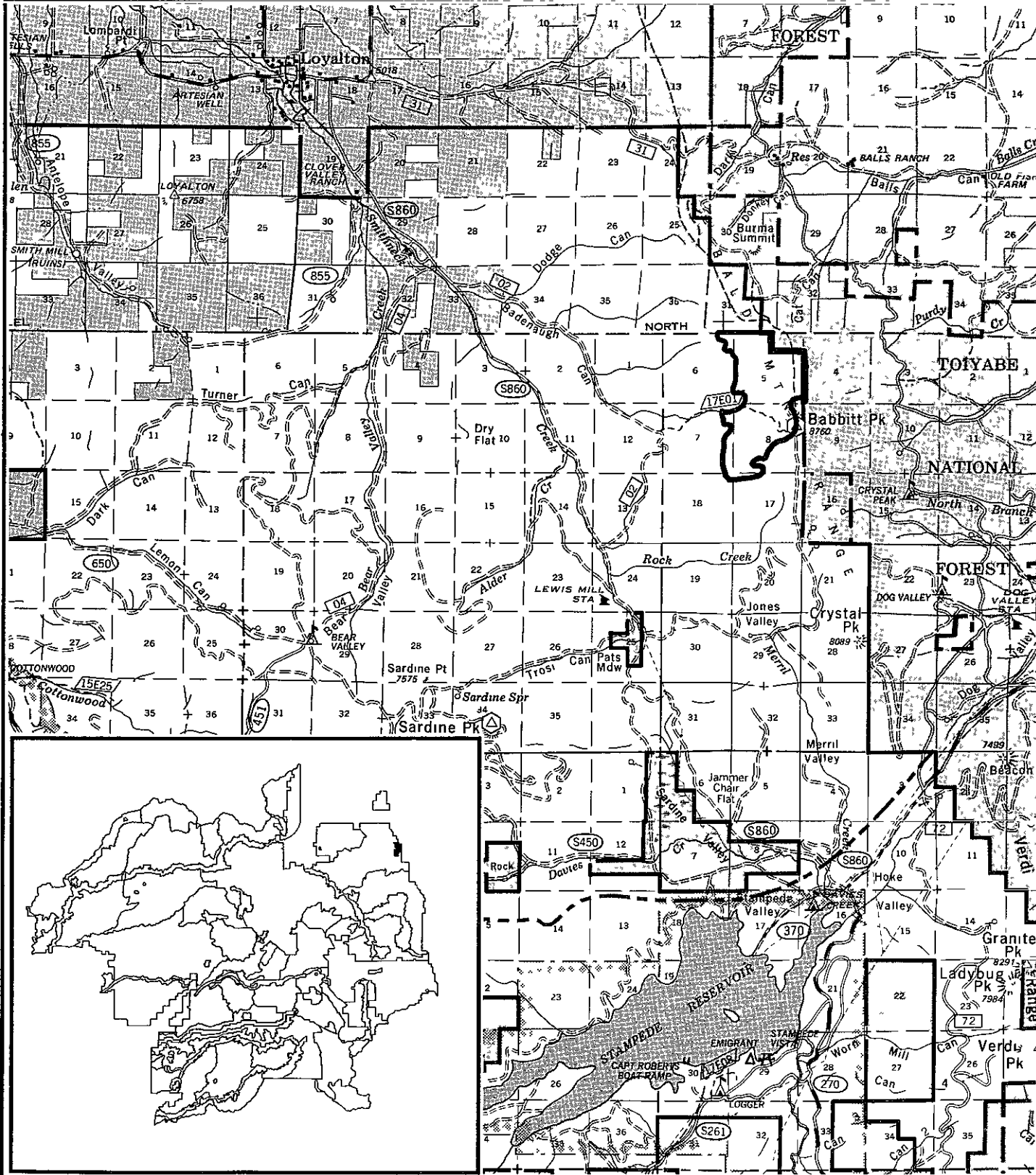
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 016

BABBITT

T20N, R17E



016 BABBITT

1,061 GROSS ACRES

1,061 NFS ACRES

I. DESCRIPTION

This management area (MA) is the proposed Babbitt Peak Research Natural Area (RNA) located southeast of Loyalton and north of Crystal Peak, within the Bald Mountain Range. Elevation varies from 7,650 feet on the east side of the ridge and 7,400 feet on the west side to 8,760 feet at Babbitt Peak.

Three scrub and five forest community types occur within the proposed RNA boundaries. These community types are sagebrush scrub, degraded sagebrush scrub, mountain mahogany woodland, aspen forest, Washoe pine forest, western white pine forest, white fir forest, and red fir forest. The Washoe pine stands are unique in that they appear to be a genetically pure form of this extremely limited species. Wetland acreage is not significant. There are 1,061 acres of unsuitable productive forest land.

Research Natural Area candidacy was first proposed in 1972. Existing Multiple Use Plans of the Tahoe and Toiyabe National Forests allocate this area for protection and scientific study of the Washoe pine and other ecological values.

There are no County or Forest Service system roads within the management area. Forest Service System Road 20N01 is a portion of the southeastern boundary. This road provides access to Babbitt Peak and receives heavy seasonal use during fall deer hunting. Off-Highway vehicle use of the area is light to moderate. Trail bikes and 4-wheel drive vehicles are prohibited on Badenaugh Trail. Snowmobile users occasionally use the area.

The proposed area is within the Smithneck Grazing Allotment.

The area does not have a history (recent) of any large fires.

Effects of past grazing and logging have not significantly detracted from the primary values.

There are no selected emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The concern is to inventory and establish acres which contribute to the preservation of examples of all significant natural ecosystems for purposes of research and ecological study and to maintain gene pools.

This MA appears to be qualified for designation as a Research Natural Area, representing Washoe pine.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to manage for the preservation and protection of the natural ecological features. Through procedures outlined in FSM 4063, this MA will be evaluated and recommended for classification by the Chief, Forest Service, as a Research Natural Area representing Washoe pine. This area is unsuited for timber management.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive nonmotorized
- B Visual Quality Objective - Preservation
- C Transportation Management Policy - Closed
- D Off-Highway Vehicle Restrictions - Closed
- E Forestwide Standards and Guidelines - The only Forestwide Standards and Guidelines that apply are 1, 3, 9, 17, 22, 23, 60, 64, 67, 68, 82, 83, and 84.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A6 Closed OHV
- A16 Research Natural Areas

- G1 Minerals Management - Locatabies
- G2 Minerals Management - Locatable Withdrawals
- G4 Minerals Management - Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only

- P4 Fire Protection - Research Natural Areas

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Recommend the MA as a Research Natural Area and manage as such until designation. Portions of this MA not designated as a Research Natural Area will be allocated to MA 011 - Smithneck.

VII. SPECIFIC MONITORING AND EVALUATION

Forest Service and research institutions may monitor for research purposes.

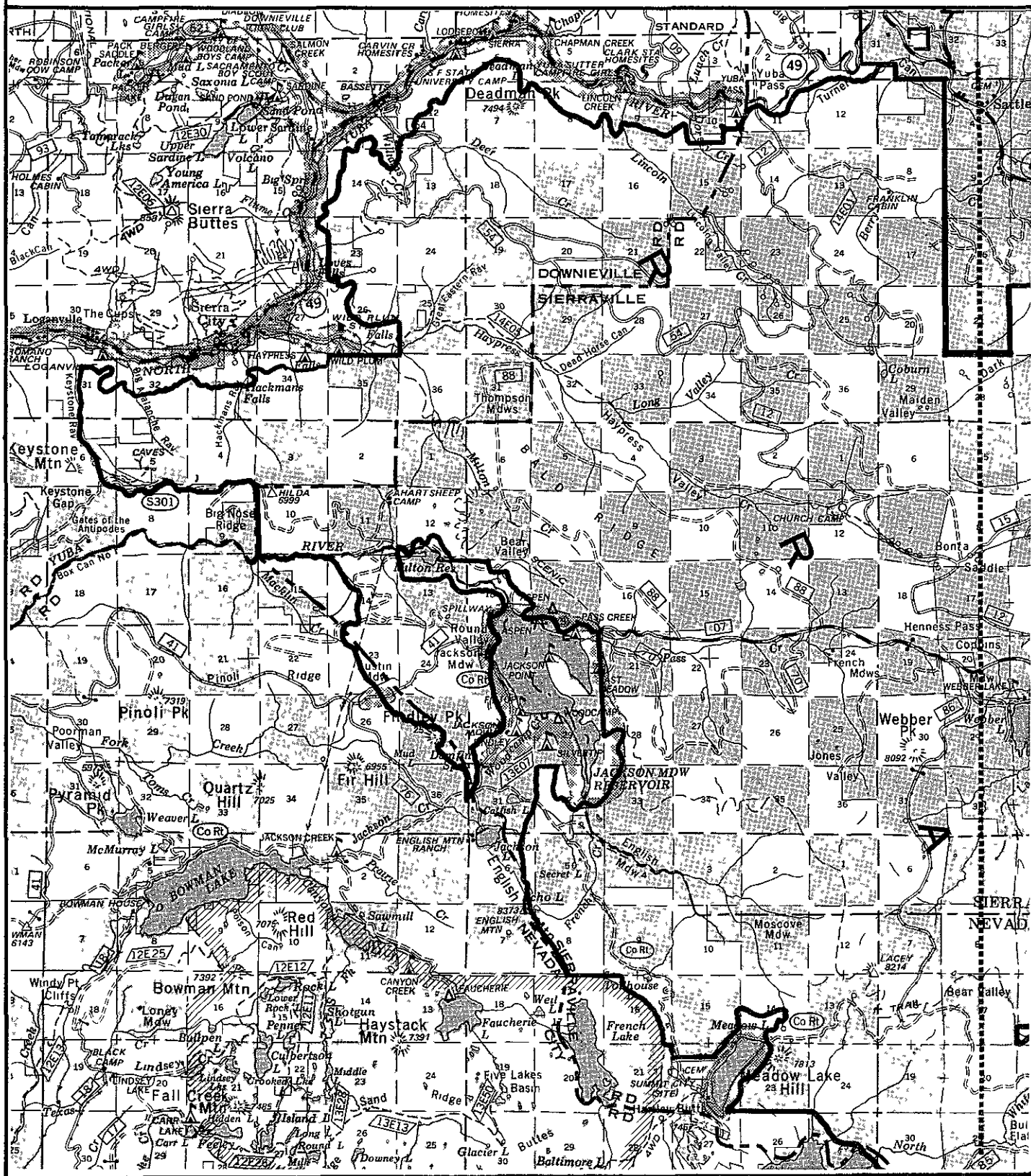
- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to List D to of Management in Chapter 4

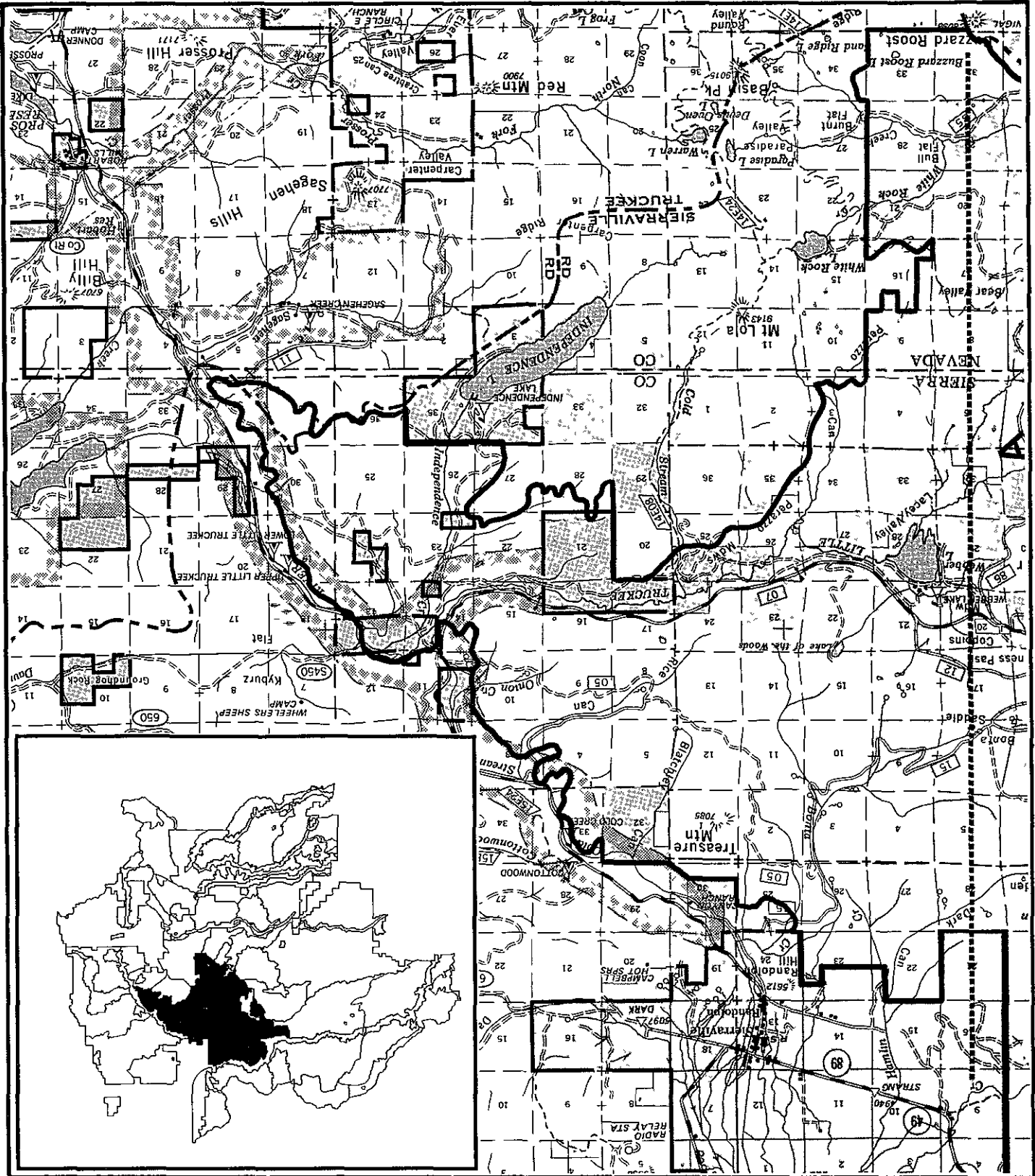
MANAGEMENT AREA NO. 17 WAS NOT USED

MANAGEMENT AREA 018

HENNESS

T19N, R13E





MANAGEMENT AREA 018

HENNESS

T19N, R13E

018 HENNESS

110,782 GROSS ACRES

61,827 NFS ACRES

I. DESCRIPTION

This management area (MA) encompasses a large portion of the western half of the Sierraville Ranger District Slopes range from flat to 100 percent, with most being 50 percent and less, elevations range from 5,000 feet to 8,600 feet. The area consists of checkerboard landownership. The timber on much of the National Forest System land in this MA was traded for private lands elsewhere on the Forest. This was completed to consolidate landownership patterns Louisiana Pacific Corporation, Santa Fe Pacific Realty Corporation, and Sierra Pacific Industries are the primary private landowners, who intensively manage their land for wood fiber production.

The predominant timber type in the eastern portion is mixed conifer. Red and white fir occur throughout the remainder of the area. Aspen patches and wet stringer meadows are scattered throughout the area. There are 5,040 acres of wetlands in the MA. There are 202 acres of unsuitable productive forest land.

Timber harvesting has been the major activity in the MA. Railroad logging was extensive in the eastern portion, while tractor logging occurred in the western part. The area is well accessed by roads due to past cutting. Cooperative road agreements exist to build additional roads and maintain the existing transportation system. A major surfaced road from Highway 89 to Jackson Meadow Reservoir (Fibreboard Road) bisects the area. This route closely parallels the old stagecoach route from Nevada to the Sacramento Valley.

Grazing is an important use. Included are range allotments Lincoln, Haypress, Bowman, Nichols Canyon, Pass Creek, English Mountain, Webber Lake, Perazzo, Kyburz, and Independence. These allotments provide permanent and transitory range for cattle and sheep.

The area provides diversified recreational opportunities from cross-country skiing and snowmobiling to fishing, hunting, and dispersed camping. A private development at Webber Lake features fishing and camping. The Pacific Crest Trail is located near the western boundary, with the Berry Creek, Haypress, and Dark Canyon Trails also in the area. Among the historical sites is the Haypress Tree in Haypress Valley.

A significant investment has been made in meeting the snowmobile use demand for the area. This investment includes the construction of a parking lot area at Little Truckee Summit, the designation of snowmobile routes, and the snow grooming of those same routes.

Important streams and creeks are the Little Truckee and Middle Yuba Rivers, and Haypress, Pass, Berry, and Bonta Creeks. A dam and diversion ditch located near Highway 89 divert water from the Little Truckee River to the Sierra Valley. This diverted water is used for irrigation.

Portions of spotted owl habitat areas G-2, H-1, I-1, I-2, and J-1 lie within this MA.

The selected emphasis species include deer, spotted owl, pileated woodpecker, goshawk, rainbow, brown, brook, and the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Protection of willow flycatcher and spotted owl habitat is a management concern.

Heavy dispersed camping along the Little Truckee River in Sections 14, 15, 22, and 23, T.19N, R.15E, causing severe resource damage, resulted in restricting camping to developed and designated sites only. The same situation exists in the area of Austin Meadow (Sections 23 and 26, T.19N, R.12E) and camping is likewise restricted. This same heavy use is occurring along several of the prominent streams and at Lake of the Woods. There is a need to manage this use, too, to prevent resource damage and the threat of human caused wildfires.

Another concern is the integrity of the treeline/meadow interface in Haypress Valley. Haypress Valley is a key fawning habitat area that should have vehicle use restricted from December through June.

Because of the extensive timber harvest that has occurred on both private and National Forest System lands, there is a significant concern for cumulative watershed effects.

There is concern that the available timber volume will be low because of the extensive cutting that has occurred to date and the volume cost of meeting mitigation measures for spotted owls, streamside management zones, and protection of watershed values

Heavy fuel loading on some of the lands has resulted in significant fire management problems.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highways 49 and 89. These highways are included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus require special consideration to preserve the character of their scenic backdrops

There is an opportunity to develop the Lake of the Woods area to manage the recreation use for dispersed camping.

There is an opportunity to improve fawning habitat for deer

There is an opportunity to intensify and improve range management.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intense even-age timber management. Emphasize range management on the transitory range created by timber harvest.

Maintain the treeline meadow interface ecotone

Retain and improve, where possible, the willow flycatcher habitat

Increase emphasis on managing dispersed recreation use both winter and summer to meet public demand and decrease resource impacts

Wild and Scenic river values will be protected for the Middle Yuba RNER until such time as the suitability study is completed and new management emphasis developed. The River is potentially eligible for 'wild', 'scenic', or 'recreation' classification

Emphasize wildlife and watershed values when managing streamside management zones, spotted owl habitat areas, areas with a high risk of cumulative watershed effects, and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing recreation development sites, special-use permit areas, etc

The desired future condition for lands intensively managed for timber production is plantations through small sawlog-size stands of the mixed conifer type. These stands will be managed on a short rotation schedule of 50 to 120 years. The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention initial VQO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on a short rotation basis. This latter category includes approximately 11,000 acres. The remaining land within the management area will be similar to the present condition

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Routed natural
- B Visual Quality Objective - Modification except partial retention for all foreground as viewed from the Fibreboard Road, from Highway 89 to Jackson Meadow Reservoir, and all middle ground seen from Highways 49 and 89
- C Transportation Management Policy - Seasonal closure and permanent closure to protect road surfaces and key wildlife areas. Access development to Independence Lake will be deferred to County or private proposals
- D Off-Highway Vehicle Restrictions - Designated routes only in summer: over-the-snow open
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A3 Commercial Nordic Cross-Country Skiing
- A4 Open OW
- A5 Restricted OW
- A8 Developed Recreation & Interpretive Service Sites Management. Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- c7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D2 Range Management - Permanent Range Type (Extensive Management)
- D4 Range Management - Transitory Range Type (Intensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- EL Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource improvement
- F2 Water Weld Improvement
- F3 Flow Timing Improvement
- F4 Soils Resource Improvement

- (31 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike
- L6 Trail Construction/Reconstruction - Special Requirements
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use
- L14 Pacific Crest National Scenic Trail Management

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Visual quality of the Haypress Valley meadow with adjacent timber areas will be assigned special cutting practices. The road system in Haypress Valley will be closed to public vehicle use during deer fawning periods.

Continue camping restrictions along the Little Truckee River, Sections 14, 15, 22, and 23, T 19N., R 15E., and In Austin Meadow, Sections 23 and 26, T. 19N., R 12E., to developed and designated sites only. Evaluate and implement necessary restrictions to manage recreation use along prominent streams and Lake of the Woods.

The partial retention VQO established for the middle grounds of Highways 49 and 89 and the Fibreboard Road foreground ensures that natural scenic quality is retained.

Develop a spotted owl management plan for SOHA's G-2, H-1, I-1, I-2, and J-1.

Develop and implement a management strategy for willow flycatcher.

Continue to evaluate and implement appropriate mitigation measures to reduce the risk of cumulative watershed effects.

Continue efforts to treat backlog activity.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor willow flycatchers to determine population trend.

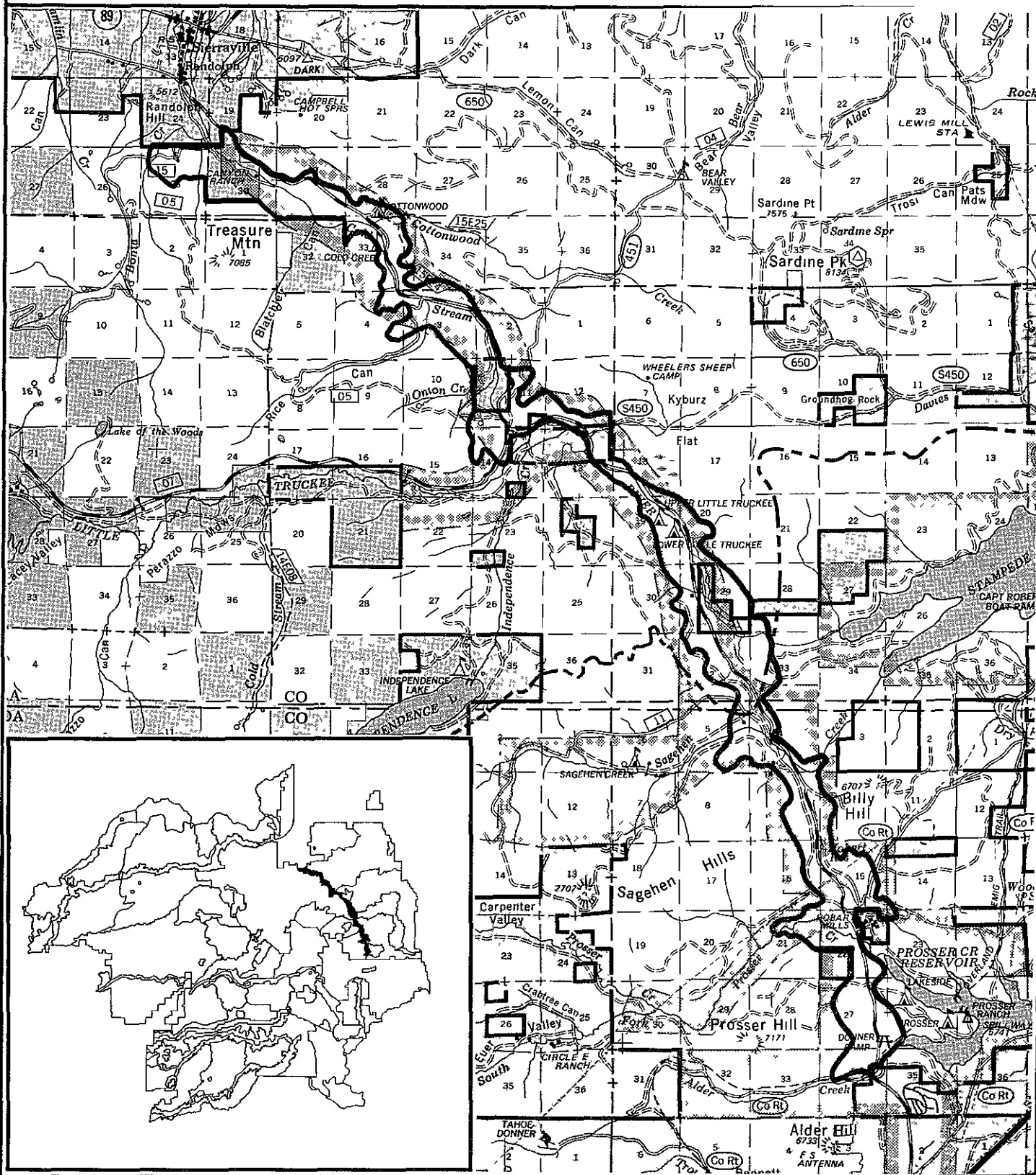
Monitor selected stream courses to assess for cumulative watershed effects.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 019

EIGHTY-NINE

T19N, R15E



019 EIGHTY-NINE

6,639 GROSS ACRES

6,344 NFS ACRES

I. DESCRIPTION

This management area (MA) is within the Little Truckee River and Sierra Valley watersheds. It is located along State Highway 89 and primarily involves the foreground viewing area from Truckee to Sierraville. Elevations vary from 5,880 feet at Truckee and 4,928 feet at Sierraville to 6,400 feet at the Little Truckee Summit. The Little Truckee River to Sierra Valley diversion ditch parallels Highway 89 in this MA.

The 1959 Coldstream and 1960 Donner Ridge Fires have severely modified the scenic and watershed characteristics. Portions of the area have been logged previously by the Forest Service and private logging companies.

Sierra and Nevada County 'Scenic Highway' ordinances apply to the State Highway 89 right-of-way through the management area. The ordinances emphasize retention of existing scenic qualities.

The Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area.

Existing uses within this area include four campgrounds, two picnic areas, a National Register Historic Site, several water transmission lines, road special-use permits, power transmission lines, a University of California - Berkeley field station garage, the Hobart Work Center, a Forest Service pasture, corrals, and a watershed. Numerous secondary roads connect to Highway 89 throughout the area.

Seven range allotments (Nichols Canyon, Kyburz, Independence, Bickford, Sagehen, Boca, and Euer Valley) are in portions of the management area.

The selected emphasis species are rainbow, brown, and brook trout, and wetlands, riparian, and meadow groups. There are 413 acres of wetlands, and 549 acres of unsuitable productive forest land.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The principal issues, concerns, and opportunities are visual quality, dispersed winter recreation, and cultural resource protection.

Some Sierra Valley citizens are particularly concerned with the visual quality related to 'old-growth' pine from Coldstream Campground to Penny Pines within the corridor.

A concern is the lack of parking for dispersed winter sports recreation and picnic areas.

Heavy dispersed camping along Highway 89, causing severe resource damage, has resulted in restricting camping to developed and designated sites only.

There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation management activities. Another concern is the protection of the National Register Site during adjacent project operations.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen from Highway 89. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve or enhance the character of its scenic backdrop.

The opportunity exists to continue rehabilitation of burned portions of this management area through coordinated timber and vegetation management and visual quality management practices. Both scenic and watershed damage can be improved by special cutting and revegetation efforts.

The Little Truckee River diversion ditch needs erosion control work to prevent further damage.

11. RESOURCE MANAGEMENT EMPHASIS

The management emphasis for this area is to maintain visual quality, restore damaged watersheds, and continue maintenance and construction of facilities for developed and dispersed recreation, including dispersed winter sports parking areas. Timber

will be managed on a regulated basis designed to maintain a natural-appearing landscape composed of forested areas of continuous tree cover of uneven-aged healthy stands consisting of various age classes (0 to 200 years)

Manage the vegetation using techniques to rehabilitate or enhance the potential character where the vegetation has been damaged by fire or biological forces. Consider converting brushfields that are the result of wildfire and understocked plantations to fully stocked timber stands, particularly on the Donner and Coldstream Burns. Thin trees and reduce competing vegetation to manage both new and existing plantations. Use special cutting to correct and control local biological infestations.

Manage the understory that exists under scattered patches of overmature timber (as exemplified by the small stands adjacent to the highway from Onion Valley to the Coldstream Burn) to replace the overmature trees as they die from natural causes.

Damaged watershed sites, like the Little Truckee diversion ditch and Prosser Creek, will need more intensive corrective measures.

Protect cultural resource values using Forestwide Standards and Guidelines.

Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study of inclusion of this trail into the National Historical Trail System.

The desired future condition is a corridor of high visual quality that includes timber stands of all ages, including mature and overmature conifer stands.

Propose withdrawal from mineral entry for 200 feet from centerline along Highway 89.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural around residential areas and developed site at southern end of MA: all other areas roaded natural
- B. Visual Quality Objective - Retention, enhancement in areas damaged by wildfire, partial retention within the developed sites. The sites will, however, meet the retention VQO when viewed as middle ground from travel routes and other occupancy sites.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply, if new local timber access roads are developed, they will generally be closed in consideration of economics, unless they can be safely used to assist in the objective of providing dispersed recreation parking.
- D Off-Highway Vehicle Restrictions - Designated routes only, summer, open over-the snow
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- A17 Visual Resource improvement
- A18 Visual Resource Travel Route Viewshed Planning

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management

- D1 Range Management - Permanent Range Type (Intensive Management)
- D2 Range Management - Permanent Range Type (Extensive Management)
- D4 Range Management - Transitory Range Type (Intensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E7 Special Cutting
- E8 Uneven • Age Cutting Method
- E9 Special Cutting - Urban/Rural/Wildland interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement

- G1 Minerals Management • Locatables
- G2 Minerals Management • Locatable Withdrawals
- G3 Minerals Management • Leasables
- G4 Minerals Management • Leasable Withdrawals

- J2 Land Adjustments- Limited

- L1 Timber Access Road Development- Road **Construction/Reconstruction**
- L2 Multi-resource Road Access Development - Road **Construction/Reconstruction**
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike
- L6 Trail Construction/Reconstruction - Special Requirements
- L7 FA&O **Construction/Reconstruction**
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

- P5 Fire Protection - Visual, High Use, Reservoirs, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Resolve the scenic and watershed rehabilitation and protection issue as stated in the Management Emphasis ~~Section~~ above. Sacrifices of some short-term visual quality objectives will be made to enhance long-term visual quality as burn scars are rehabilitated.

Prepare a travel route viewshed plan to identify specific ways to achieve the desired visual quality.

Continue restricting camping along Highway 89 to developed and designated sites only.

Continue to work with State and local agencies to expand dispersed winter parking opportunities. One dispersed winter sports parking area has been constructed, while a second is being developed. Construct additional dispersed winter sports parking areas as the needs and opportunities arise.

The concern for protection of the National Register **Site** will be satisfied by Forestwide Standard #1. This **site** will continue to be served by a national recreation trail.

Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in "The Overland Emigrant Trail Through The Tahoe National Forest" until more refined evidence is disclosed.

Continue to manage the forage resources under current directions.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor and evaluate stabilization and restoration efforts along stream courses in the management area.

All projects adjacent to the National Register **Site** shall have a mandatory cultural resource monitoring plan as a part of the project proposal. Monitoring shall be done by a qualified Forest Service official.

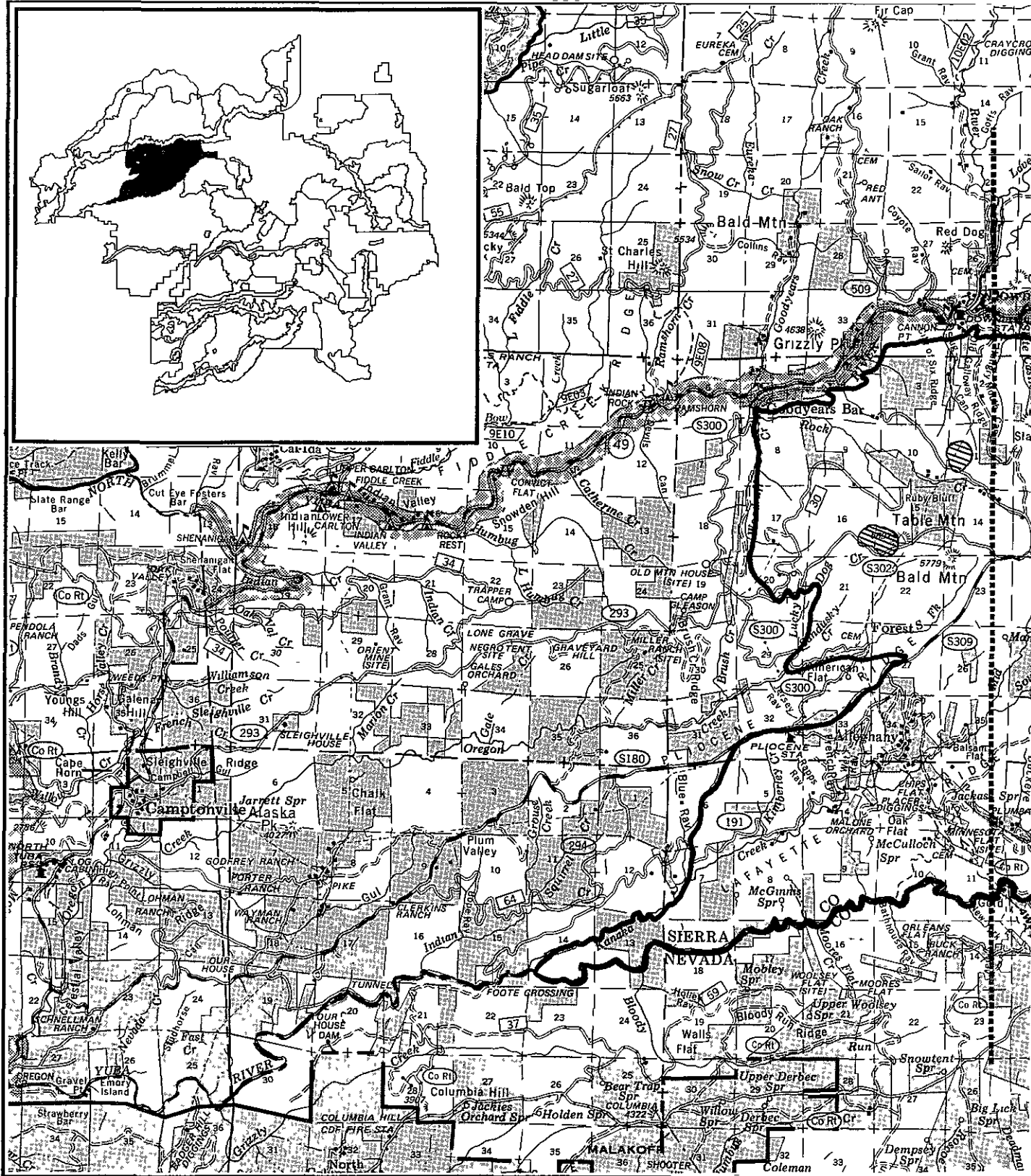
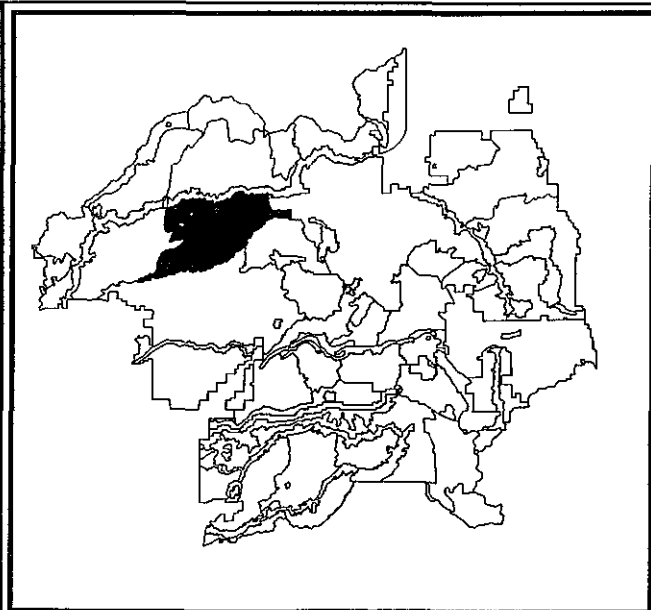
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.

2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 020

CORNISH

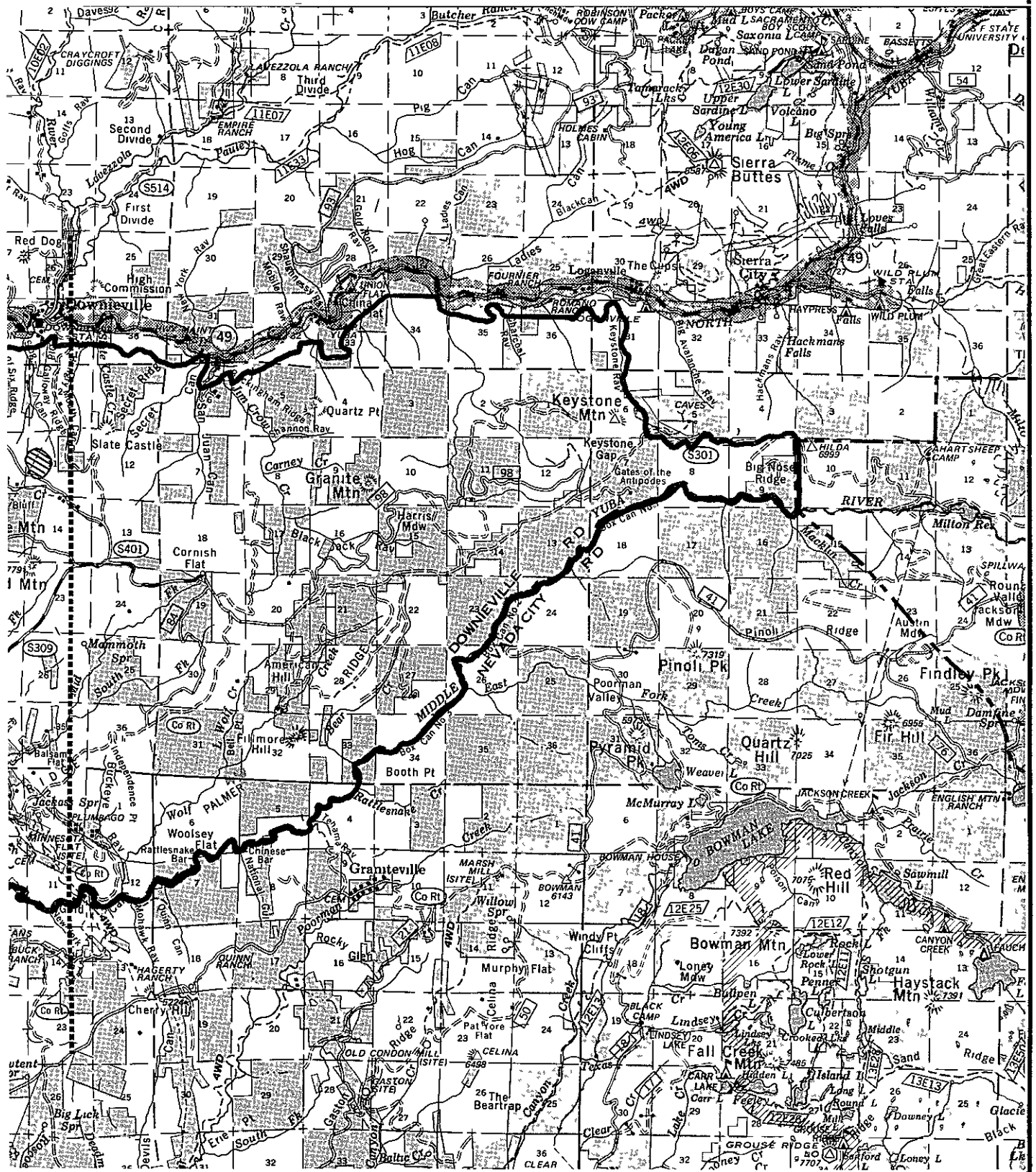
T19N, R11E



MANAGEMENT AREA 020

CORNISH

T19N, R11E



020 CORNISH

51,004 GROSS ACRES

35,714 NFS ACRES

I. DESCRIPTION

This management area (MA) is north of the upper drainage of the Middle Yuba River and east of the Alleghany community. Elevations range from 2,500 feet to 6,800 feet on Keystone Mountain. A portion of the area was identified as a RARE I area, but did not meet RARE II criteria.

Approximately one-half of the private land is intensively managed for timber production by the timber companies which own the land. Much of the remaining private land is patented mining claims. The community of Alleghany is within this management area. The community of Forest consists of several homes and other buildings, the remnants of a mining community on National Forest System lands.

The area is 75 percent accessed by County and National Forest System roads.

Deposits of auriferous gravels are located in the area in a north to south direction. This is the heart of the Northern Mines region, with historic and active mining operations. Dredging is popular in the Middle Yuba River and its major tributaries.

The lower Middle Yuba River canyon slopes are very steep. Vegetation is characterized by mixed conifer and red fir forests interspersed with large brushfields resulting from past fires. There are 642 acres of wetlands. There are 393 acres of unsuitable productive forest land.

The American Hill Cattle Allotment is located within this MA.

A portion of spotted owl habitat area L-1 lies within this MA.

Selected emphasis species within the area are: deer, pileated woodpecker, goshawk, spotted owl, brook and rainbow trout, and the wetlands, riparian, meadow, and hardwood groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Some historic gold producing mines in the area have been reopened or are expected to renew operations.

There is an interest in limiting further roading to maintain the roadless character, solitude, and quality fishing experience in the Middle Yuba River gorge.

There is a concern for fire protection of inclusions of private land with existing and future residential structures and the communities of Alleghany and Forest. Fire suppression tactics and strategies will be complicated by limited access, life and property concerns, and long response times of fire agency equipment and personnel. There has been an increase in incidents of human-caused fires in this area.

There are many miles of unsurveyed land lines (backlog). Land surveys are critical for resource management in this area.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 49. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

An opportunity exists to improve wildlife habitat, especially in the migration corridors for deer.

An opportunity exists to use transitory range created by timber harvesting.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Unscheduled timber harvest may be practiced on lands unsuitable for timber production such as existing recreation development sites, special-use permit areas, etc. Emphasize even-age (regulated) long rotation management for the red fir and short rotation management for mixed conifer. Emphasize range management on the transitory range opportunities created by timber harvesting.

Emphasize wildlife habitat improvement. Emphasize wildlife and watershed values in streamside management zones, spotted owl habitat areas, and where threatened and endangered species occur. Coordinate management in Highway 49's middle ground to maintain a predominantly natural landscape.

Wild and Scenic river values will be protected for the Middle Yuba River until such time as the suitability study is completed and new management emphasis developed. The RNER is potentially eligible for 'wild', 'scenic', or 'recreation' classification.

Manage the Middle Yuba River gorge for dispersed recreation with an emphasis on maintaining a high quality fishery.

Make mineral development compatible with other resource management of the area. Mining activity in the Middle Yuba River gorge must be compatible with maintaining the remote character of the canyon.

The desired future condition for lands intensively managed for timber production is plantations through small sawlog-size stands of the mixed conifer type. These stands will be managed on a short rotation schedule of 50 to 120 years. The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention initial VQO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on a short rotation basis. This latter category includes approximately 4,912 acres. The remaining land within the management area will be similar to the present condition.

Emphasize the design of resource practices that enhance fire protection of forest resources and adjacent residential areas. Encourage development of local ordinances, fire prevention programs, and fire safe practices in private residential areas. Devise fuel management strategies to reduce the fire threat along the interface between wildland and residential zones.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roded natural Semi-primitive motorized within Middle Yuba gorge.
- B Visual Quality Objective - Partial retention for the Middle Yuba River gorge area and middle ground as seen from Highway 49. Modification for the remainder of the area. Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have herein been assigned the modification VQO.
- C Transportation Management Policy - Forestwide Standards and Guidelines shall apply.
- D Off-Highway Vehicle Restrictions - Open.
- E Forestwide Standards & Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method

- E4 Intermediate Cutting • Existing Stands
- E5 Commercial Thinning • Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F3 Flow Timing Improvement

- G1 Minerals Management- Locatables
- G2 Locatable Withdrawals
- G3 Minerals Management- Leasables
- G4 Leasable withdrawals
- G5 Minerals Management* Saleables

- J2 Land Adjustments • Limned

- L1 Timber Access Road Development* Road Construction/Reconstruction
- L2 Multiresource Road Access Development • Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike
- L6 Trail Construction/Reconstruction - Special Requirements
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads • Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads • Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails • Restricted Use

- P1 Fire Protection- Continuous Fuels
- P3 Fire Protection- Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The Middle Yuba River canyon gorge will remain largely unaccessed and will be managed for dispersed recreation and maintenance of a quality fishery.

Resolution of landline backlogs will require a major investment Complete land surveys as timber sales are planned.

Closely coordinate mining development with other resource needs to minimize impacts. Mitigate concerns using standard practices and guidelines prescribed for mining developments.

Coordinate fire protection activities including fuels management with the California Department of Forestry and Fire Protection along with local communities. Develop fire prevention and fuels management plans to reduce threat of large fires and loss of life and property. Meet with local volunteer fire departments once a year to increase cooperation and revise agreements as necessary.

Develop a spotted owl management plan for SOHA L-1.

VII. SPECIFIC MONITORING AND EVALUATION

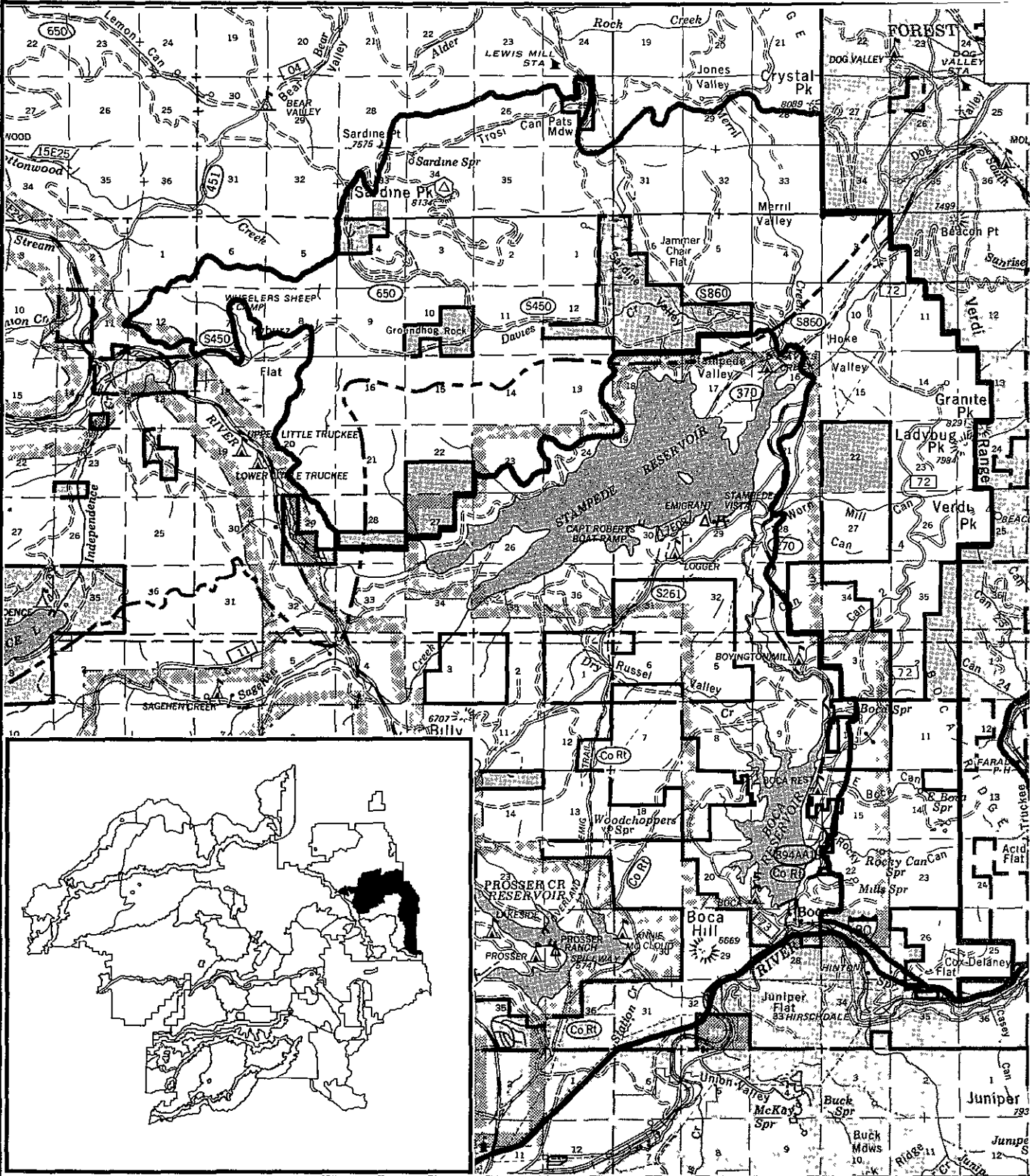
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 021

SARDINE-WORN

T19N, R16E



021 SARDINE-WORN

34,450 GROSS ACRES

34,410 NFS ACRES

I. DESCRIPTION

This management area (MA) is north and east of Stampede Reservoir, bordered to the north by Little Truckee Summit, Sardine Peak, and Crystal Peak. The eastern border is the Toiyabe National Forest, the west borders the Eighty-Nine management area, which is a long corridor along Highway 89. Elevations vary from approximately 5,500 feet to about 8,300 feet. The area was railroad logged, and portions of the area were burned in the 1947 and 1960 fires. This area receives a significant amount of dispersed recreation, primarily OHV use.

There is an extensive transportation system, a large portion of which is under the jurisdiction of Sierra County. The Sardine Peak Lookout is located in the northwest corner of this MA. The Davies Creek Campground is to the east of Sardine Valley. The Boca Springs Campground is located east of Boca Reservoir. A Forest Service radio site is located on Verdi Peak at the recently reconstructed Forest Service lookout. There is a special-use permit to the University of Nevada - Reno for a seismic transmitter.

Watershed restoration efforts have been made in several channels and meadows eroded by past logging practices. Locations include Canyon 4, Worn Mill, Hoke Valley, and Davies Canyon.

A long distance OHV route has been established from Boca Reservoir to Second Summit on the Tahoe - Toiyabe NF border.

Old railroad grades exist throughout this area, and a portion of this area has been nominated to the National Historic Register.

The Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area.

The Donner Burn revegetation effort resulted in significant amounts of brush and grass lands and young timber plantations. Many of the lands in the management area were acquired in the early 1980's in the Hopkins Exchange, leaving a significant fuels and reforestation backlog.

Portions of the Boca, Payen, Smithneck, Kyburz, and Bickford range allotments are within this MA.

There are 680 acres of wetlands, and 3,939 acres of unsuitable productive forest land.

The selected emphasis species are deer, and the riparian, wetland, and meadow groups. Several deer migration routes cross the area, key fawning habitat for deer also exists in this MA.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Visual quality is a critical resource management concern in this management area. This concern focuses on lands seen as middle ground from Highway 89, Interstate 80, and Boca, Prosser, and Stampede Reservoirs. Highways 89 and I-80 are included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus require special consideration to preserve the character of their scenic backdrops.

In plantations there is an opportunity to increase to increase vegetation diversity for wildlife, aesthetics, wildfire protection, insect protection, and other silvicultural objectives.

There are some acres within this management area that have been considered permanent range in the range allotment management process that were also considered as a part of reforestation needs. This apparent conflict will need resolution.

A concern is the sparsely stocked eastside pine stands and the reforestation needs potential to produce wood and forage outputs.

Sierra County desires to widen and improve the Smithneck Road, which will require close coordination.

There is an opportunity to improve wildlife habitat, especially in the deer migration corridors and fawning areas.

There is an opportunity to provide fuelwood.

Dispersed camping in areas near Boca and Stampede Reservoirs has caused resource damage, resulting in restricting camping in these areas to developed sites and designated camping areas only.

There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation management activities

There is an opportunity to provide for OHV use in the MA. However, shallow erosive soils in the Verdi Range are a concern. Where there is a conflict, mitigations will need to be designed to resolve the problem. There is an opportunity to extend the OHV route that exists from Boca Reservoir to Second Summit to the north and west to Little Truckee Summit, where there is an OHV staging area.

Because of the flat terrain and open nature of a portion of the area, fishermen, fuelwood cutters, hunters, and recreationists with other interests generate a great deal of motorized travel both on and off roads. A large volume of roads and unclassified wheel tracks have resulted from this travel with a high rate of resource damage that has occurred primarily in early winter and spring. Impacts to wet meadows and rutting of roads commonly occur. If uncontrolled, resource damage is likely to continue.

Watershed restoration opportunities include additional channel restoration efforts and maintenance of existing structures.

The opportunity exists to continue rehabilitation of the burned areas through coordinated timber management and visual quality practices. Both scenic and watershed damage can be improved by special cutting and revegetation efforts.

III. RESOURCE MANAGEMENT EMPHASIS

Coordinate management of the middle ground as seen from State Highway 89, Interstate 80, and the reservoirs to maintain a predominantly natural landscape. Consider restoration or enhancement of the visual impacts of fire scars.

The desired future state is a mosaic of even-aged timber stands consisting of various age classes that are interspersed with meadows and grasslands.

Manage the vegetation using techniques to rehabilitate or enhance the potential character where the vegetation has been damaged by fire or biological forces. Consider conversion of brush fields, resulting from fire and understocked plantations, to fully stocked timber stands, particularly in the Cold Stream and Donner Burns.

Enhance existing permanent range and improve the transitory range resulting from even-age timber management practices. Emphasize regulated, long-rotation timber management (150+ years) at elevations greater than 5,500 feet.

The major resource management emphasis is long rotation, regulated, intensive even-aged timber production on suitable timber sites and forage production on permanent and transitory range. Intensively manage sparsely stocked eastside pine stands for forage production to increase the range carrying capacity: evaluate those stands for the optimum mix of wood and forage outputs.

Emphasize wildlife and watershed values when managing streamside management zones and where threatened and endangered species' habitats occur.

Emphasize deer habitat improvement on lands identified as migration routes for the Washoe-Loyalton Deer Herd and in key fawning areas.

Continue watershed restoration, including structure maintenance, in Canyon 4, Worn Mill, Hoke Valley, and Davies Canyon.

Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing and potential recreation development sites, special-use permanent areas, rangeland conversion areas, etc.

Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include this trail into the National Historic Trail System.

Maintain dispersed recreation opportunities. Establish OHV routes compatible with soil capabilities.

The desired future condition on lands intensively managed for timber is plantations through medium-size sawlog stands in the eastside pine forest type. Manage plantations for rotation ages of 100 to 150 years. The area converted to forage will be maintained as a grass, forb, and brush plant community. The remaining lands within the management area will be similar to their present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum- Rooded natural.
- B. Visual Quality **Objective** - Partial retention for the foreground of Smithneck Road, the middlegrounds of Highway 89 and Interstate 80, and the foreground and middleground viewed from Boca/Stampede County Road, Henness Pass Road, and developed recreation sites within management area 32. Modification for remainder of the MA.
- C. Transportatton Management Policy - Close new local timber access roads wherever needed to reduce erosion hazards and wetland damage
- D. Off-Highway Vehicle **Restrictions** • Designated routes only, summer Open over-the-snow
- E. Foreshvde Standards end Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 open OHV
- A5 Restricted OHV
- A8 Developed Recreation & interpretive Service Sites Management, Public Sector
- A1? Visual Resource Improvement

- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- c 7 Late Seral Stage Vegetation Management
- C8 Structural Habttat Improvement and Maintenance

- D1 Range Management • Permanent Range Type (intensive Management)
- D2 Range Management - Permanent Range Type (Extensive Management)
- D4 Range Management • Transitory Range Type (intenswe Management)
- D5 Range Management • Translatory Range Type (Extensive Management)
- D7 Range Improvement • Nonstructural (Permanent and Transitory)
- D8 Range Improvement • Structural (Permanent and Translatory)
- D9 Range/Scattered Eastside Pine Evaluation

- E1 Clearcut Cutling Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting • Existing Stands
- E5 Commercial Thinning • Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven Aged Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F2 Water Meld Improvement
- F3 Flow Timing Improvement
- F4 Soils Resource improvement

- G1 Minerals Management • Locatables
- G2 Minerals Management • Locatable Wlthdrawais
- G3 Minerals Management • Leasabies
- G4 Minerals Management • Leasable Wlthdrawals
- G5 Minerals Management • Safeabies

- J2 Land Adjustments • Limited

- L1 llimber Access Road Development • Road **Construction/Reconstruction**
- L2 Muitiresource Road Access Development • Road **Construction/Reconstruction**
- L4 Trail **Construction/Reconstruction** • Foot & Equestrian Traffic Only

- L5 Trail Construction/Reconstruction • Foot, Equestrian, and Trailbike
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads • open
- L9 Transportation Management, Roads • Regulated Use
- L10 Transportation Management, Roads • Closed
- L11 Transportation Management, Roads • Obliterated
- L12 Transportation Management, Trails • Open
- L13 Transportation Management, Trails • Restricted Use

- P1 Fire Protection • Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Smithneck Road is Forest Highway (FH) #126 Coordinate Improvements of FH #126 with Sierra County and the Federal Highway Administration

Permit grazing on suitable timberlands if compatible with timber objectives

Develop and Implement a road and wheel track management plan in cooperation with the California Department of Parks and Recreation's OHV program. Obliterate, stabilize, and revegetate surplus roads and wheel tracks that are not needed for administrative or public uses. Continue to stress resource protection through prevention, law enforcement, and public education. Restrict summer motorized travel to designated routes only. Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in The Overland Emigrant Trail Through The Tahoe National Forest until more refined evidence is disclosed.

Continue to restrict camping to developed and designated sites only near Boca and Stampede Reservoirs as needed

Evaluate sparsely stocked eastside pine stands and reforestation needs to determine the optimum mu of wood and forage outputs

Sacrifice some short-term visual quality objectives to enhance long-term visual quality as burn scars are rehabilitated

Increase vegetation diversity through regeneration and intermediate harvesting, fuelbreak construction, and other stand management activities, including planting of other locally adapted species

The partial retention VCO established for the middleground from State Highway 89, Interstate 80, and the reservoirs ensures that the natural scenic quality is retained

VII. SPECIFIC MONITORING AND EVALUATION

Monitor designated routes and OHV use in Verdi Peak area on erosive soils and wetlands

Monitor the sparsely stocked eastside pine stands' and the reforestation need acres' production of wood and forage outputs.

Monitor health and vigor of larger plantations and effectiveness of treatments aimed at increasing vegetation diversity.

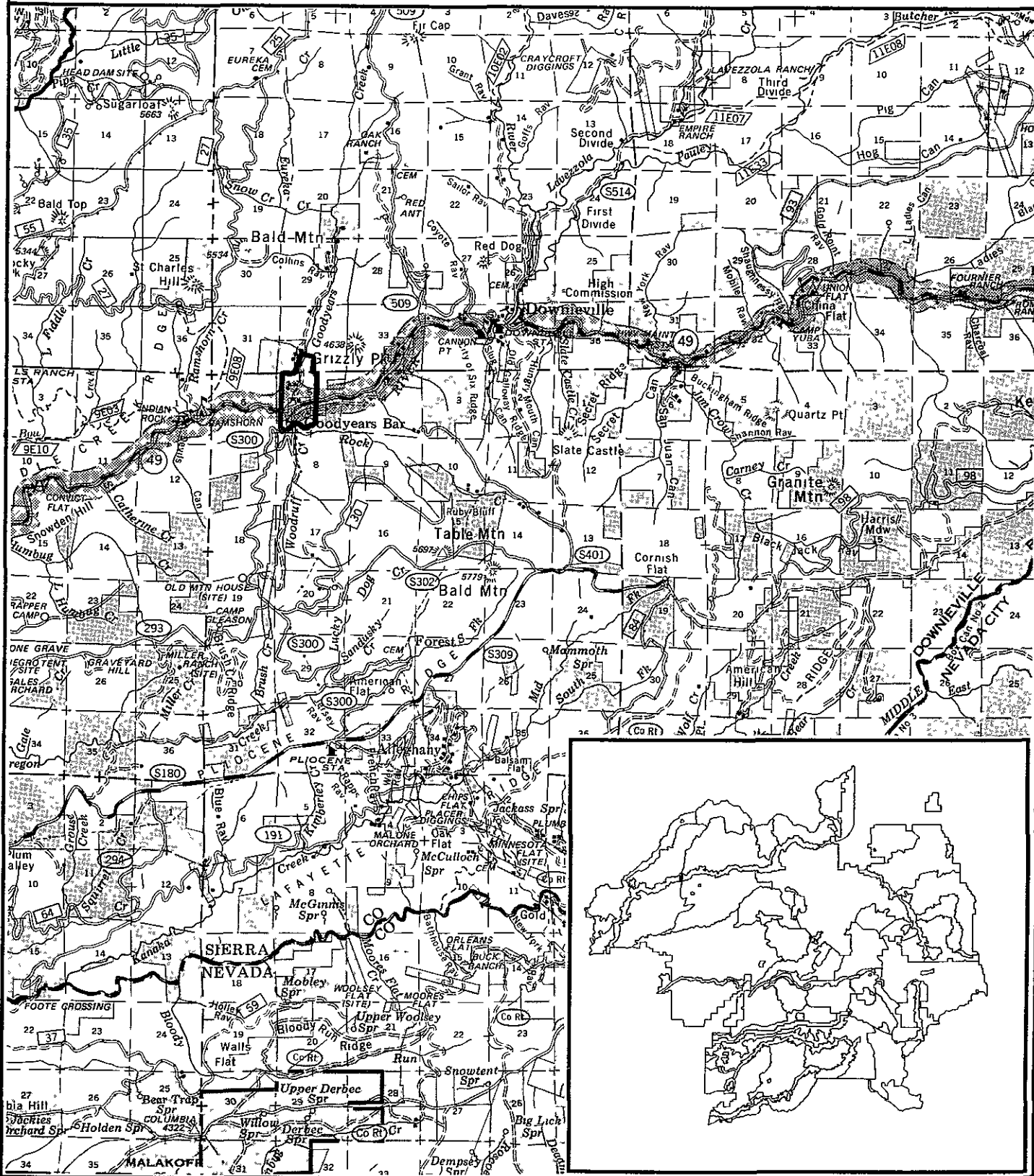
- 1/ Refer to Resource Stewardship and Silviculture Standards Manual
- 2/ Refer to complete Descriptions of Management Practices in Chapter V



MANAGEMENT AREA 022

GOODYEARS

T19N, R10E



022 GOODYEARS BAR

183 GROSS ACRES

183 NFS ACRES

I. DESCRIPTION

This management area (MA) encompasses those National Forest System lands within the existing Goodyears Bar townsite that is considered for townsite expansion. Expansion may be accomplished through townsite expansion authorities, exchange, or other means.

Because of inadequate surveys and occupancies on mining claims, some residences are located on National Forest System land near the Goodyears Bar community. Also, there is local and County interest in expanding the Community onto developable National Forest System lands because of the severely limited housing opportunities in the Downieville-Goodyears Bar area. To resolve the existing residential occupancies on National Forest System lands and provide an opportunity for community expansion would require either a land exchange or acquisition by a community entity under townsite authority.

Lands within this MA are gently sloping, mixed conifer forest and are suited for community expansion. The North Yuba River, Woodruff Creek, and Goodyears Creek flow through the townsite.

Some open meadow and brushlands are located within the area. Wetland acreage is insignificant. There are 183 acres of unsuitable productive forest land.

There are no selected emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is an opportunity for community expansion by transferring Federal lands to private ownership.

III. RESOURCE MANAGEMENT EMPHASIS

The emphasis is to make lands available for townsite expansion through land adjustment processes. New land and resource allocations or uses will be deferred if they would adversely affect the lands needed for townsite expansion.

Timber is unsuitable for regulated timber production.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Rural.
- B. Visual Quality Objectives - Modification, Partial retention as seen from Highway 49.
- C. Transportation Management Policy - Forestwide Standards and Guidelines will apply.
- D. Off-Highway Vehicle Restrictions - Designated routes only.
- E. Forestwide Standards & Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector

- G1 Minerals Management - Locatables
- G2** Minerals Management - Locatable Withdrawals
- 03 Minerals Management - Leasables
- 04 Minerals Management - Leasable Withdrawals

- J3 Land Adjustments - Potential Exchange

- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Proposals for new projects, activities, or uses of National Forest System land within this area will only be approved if they are for public use and will not conflict with transfer of land to private ownership

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

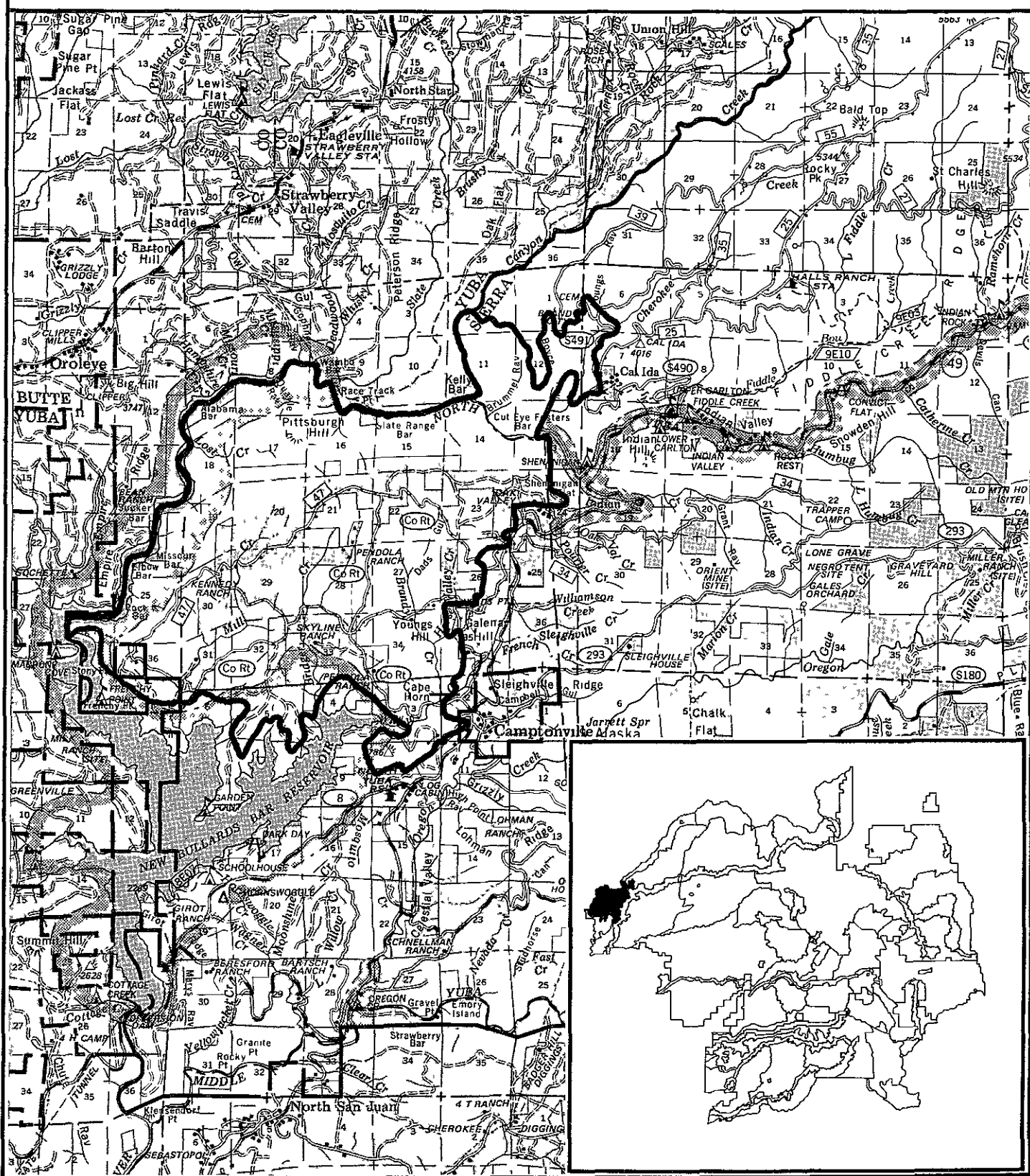
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V,

MANAGEMENT AREA 023

PENDOLA

T19N, R8E



023 PENDOLA

16,669 GROSS ACRES

11,628 NFS ACRES

1. DESCRIPTION

This management area (MA) is west of Highway 49 near Camptonville, north of Bullards Bar Reservoir, and extends to the North Yuba River. Elevations range from 1,900 feet along the North Yuba River to 3,700 feet at Pittsburgh Hill.

The entire area is one of the most highly productive timber sites on the Downieville Ranger District. Wetland acreage is minor.

Seventy-five percent of the area is accessed, the remainder is primarily limited to steep terrain above the North Yuba River.

A large portion of the Willow Creek Cattle Allotment is located within this MA.

Most streams and rivers contain mining claims and active dredging operations. Youngs Hill Diggings is one of the most significant hydraulic mine sites and continues to present erosion and sedimentation problems.

Approximately one-half of the area is private. Ownership varies in size from PG&E's several thousand acres managed for timber production to small five-acre homesite parcels. There are resource management conflicts with some private landowners.

A portion of spotted owl habitat area B-2 lies within this MA.

Wildlife emphasis species are deer, spotted owl, goshawk, bald eagle, rainbow trout and the riparian, meadows, and hardwood groups. Bald Eagle winter roosting areas have been identified near Bullards Bar and nesting has occurred. There are about 2,000 acres of hardwoods and hardwood-conifer that provide important key deer winter range.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The intermingled private land continues to generate issues, such as inaccurate land surveys that are critical to management of this area. Also, cumulative impacts from timber harvesting of private and National Forest System land is a concern.

There is a concern to retain or improve key winter deer range.

Pittsburgh Hill Road traverses a key winter deer range, and traffic is disruptive during the critical life cycle.

Dispersed camping near Bullards Bar Reservoir has caused resource damage, resulting in restricting camping to developed sites and designated camping areas only. In those areas near the reservoir.

Road management problems have increased dramatically in this area with the increased demand for fuelwood and hunting popularity.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 49 and Bullards Bar. Highway 49 is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

The opportunity exists to develop a consistent approach to managing dredging and other forms of mining along the North Yuba River.

There is a concern for fire protection in an area with intermixed private lands with residences.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitory range created by timber harvesting.

Emphasize wildlife and watershed values when managing streamside management zones, spotted owl habitat areas, and where threatened and endangered species' habitats occur. Key winter deer range habitat improvement will be emphasized in the hardwood and hardwood-conifer types.

Maintain a predominantly natural landscape in the Highway 49 middleground.

The desired future condition for lands intensively managed for timber production is plantations through small sawlog-size stands in the mixed conifer and hardwood-conifer forest types. These stands will be managed on a short rotation schedule of 50 to 120 years. The remaining land within the management area will be similar to the present condition.

Emphasize design of resource management practices that improve fire protection. Break up continuity of fuels along boundaries between National Forest System and private land. Coordinate fire protection planning with the adjacent land owners and the California Department of Forestry.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural
- B Visual Quality Objective - Partial retention for middleground of Highway 49, and the area viewed from the North Yuba River and Bullards Bar Reservoir. Modification for the remainder of the area
- C Transportation Management Policy - Selected roads with unstable road surfaces shall be closed. Forestwide Standards and Guidelines apply in the rest of the MA.
- D Motor Vehicle Restrictions - Designated routes only except closed south of the Long Point Road because of key winter deer range (between November 1 and May 1). This restriction can be amended if weather conditions are such that deer are not on the winter range.
- E Forestwide Standards & Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- A6 Closed OHV
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- D1 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)
- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E9 Special Cutting - Urban/Rural/Wildland Interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment

- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Muhiresource Road Access Development - Road Construction/Reconstruction
- L8 Transportation Management Roads - Open
- L9 Transpoltation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

- P1 Fire Protection - Continuous Fuels
- P3 Fire Protection - Improvements
- P5 Fire Protection - Visual, High Use. Reservoirs, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Resource management conflicts will require continued coordination with County and State agencies as well as local landowners. Establishing property boundaries is essential

Continue to restrict camping to developed sites and designated camping areas only where needed

Develop a joint policy between the Tahoe and Plumas National Forests to manage the minerals resources along the North Yuba River

Coordinate fire protection activities including fuels management with the California Department of Forestry, Camptonville Volunteer Fire Department, and local residents. Develop fire prevention plans that emphasize the State of California Fire Safe Program and fuel management plans to reduce the threat of large scale fires and the loss of life and property

Retain and improve, where possible. key winter deer range. Manage key deer winter range habitats to provide a 60/40 forage/cover mixture

Close Pittsburgh Hill Road at both ends during critical wildlife cycle (November 1 - May 1).

Encourage County governments to zone for agriculture and forestry land uses

Develop a spotted owl management plan for SOHA B-2

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitor key deer winter ranges in coordination with the Downieville Deer Herd Management Plan objectives

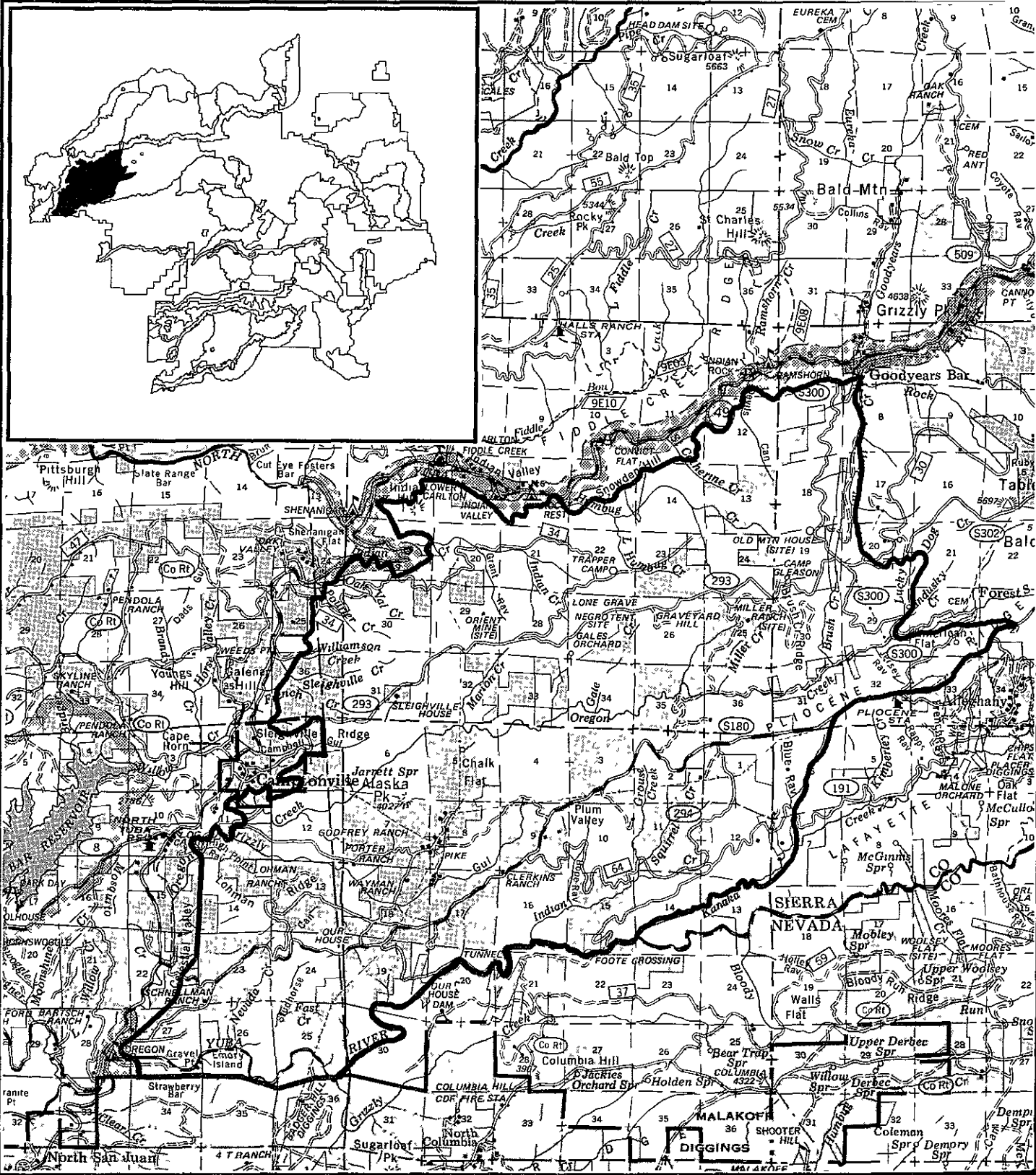
The partial retention VQO established for the Highway 49 middleground ensures that the natural scenic quality is retained

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to Complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 024

OREGON

T19N, R9E



024 OREGON

38,911 GROSS ACRES

23,623 NFS ACRES

I. DESCRIPTION

This management area (MA) is located within the Oregon Creek watershed, east of Highway 49 and the community of Camptonville, and west of the community of Alleghany near the Pliocene Ridge. Elevations range from 1,600 feet along the Middle Yuba River to 5,200 feet near Mountain House.

Approximately one-half of the land is privately owned. Sierra Pacific and Bohemia, Inc., presently own large acreages of land within the management area, which are managed for timber production. The balance of the lands are typically small 1-40 acre parcels. These small parcels are used primarily as residential homesteads.

Portions of this MA are seen from Highway 49, however, most of these areas are privately owned.

Vegetation is mostly mixed conifers, large brushfields, and pine plantations that resulted from reforesting the 17,500-acre Mountain House Fire of 1959. The brushlands are some of the District's most important transitional grazing land. There are 99 acres of wetlands. There are 48 acres of unsuitable productive forest land.

Portions of spotted owl habitat areas A-1, A-2, B-2, D-2 and F-1 are within this MA.

The selected emphasis species are deer, spotted owl, pileated woodpecker, goshawk, rainbow and brown trout, and the riparian and hardwood groups. This area contains key winter deer range.

The area is 95 percent accessed by National Forest System and County roads. Road standards range from the Forest Highway category to primitive four-wheel drive mining access roads.

Dispersed recreation use is primarily for hunting and fishing, particularly along Oregon Creek.

Deposits of auriferous gravels cross the management area in a north-south direction. Both historic and contemporary mining activities have left impacts ranging from the large Indian Hill Diggings to small excavations. There are unstable lands in the Gales Orchard area.

The MA contains portions or all of Our House, Mountain House, American Hill, and Oregon Creek Grazing Allotments.

Campbell Gulch is the watershed for the town of Camptonville Springs and surface runoff supply water for the town's storage reservoir. Woodruff Creek provides water to portions of Goodyears Bar.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The greatest issue is resource management near intermingled private land. One problem is controlling grazing in a largely unfenced, but residentially occupied, land pattern. There is a concern for wildland fire protection of intermingled private lands. This concern focuses on structural developments. There is also a concern that large contiguous areas within and surrounding plantations are developing fuel profiles that could result in large wildfires.

There is a concern as to the need to retain or improve key winter deer range. In four areas, key winter deer range may be impacted by vehicle use during critical wildlife cycles. They are Plum Valley, Lohman Ridge, Pike-Camptonville Road, and the Oregon Creek Dam Road. The latter two sites are adjacent to roads under other agency jurisdictions. An opportunity exists to improve wildlife habitat, including key deer winter range through hardwood management. Key winter deer range should be managed to provide about a 60/40 forage-cover ratio.

There is a concern about stabilizing land flows around the Gales Orchard Slide and minimizing sedimentation from this slide and from historic hydraulic diggings. Protection of water quality in Campbell Gulch for Camptonville's domestic water supply, as well as Woodruff Creek, is a concern.

Visual quality is a critical resource management concern on lands seen as middle ground from Highway 49. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

A hydroelectric project has been proposed on Oregon Creek. Concerns have been expressed regarding soil stability, visual impact, and the effect on the Oregon Creek fishery if the hydroelectric project is constructed.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitory range opportunities created by timber harvest. Key winter deer range will be managed to maintain or improve its condition.

Emphasize wildlife and watershed values when managing in streamside management zones, spotted owl habitat areas, and where threatened and endangered species habitats occur.

Wild and Scenic river values will be protected for the Middle Yuba River until such time as the suitability study is completed and new management emphasis developed. The River is potentially eligible for 'wild', 'scenic', or 'recreation' classification.

Coordinate management of middle ground with other resource activities to maintain a predominantly natural landscape.

Unscheduled timber harvest may be practiced on lands unsuitable for timber production such as existing recreation development sites, special-use permit areas, etc.

Emphasize wildfire planning with neighboring landowners and coordinate with the California Department of Forestry. Coordinate protection of Mt. House plantations using resource management practices. Design projects to break up large continuous areas of hazardous fuel complexes.

Emphasize improving key deer winter range.

Emphasize watershed restoration of Gales Orchard slide. Emphasize watershed quality in Woodruff Creek and Campbell Gulch to protect the domestic water supply.

The desired future condition for lands intensively managed for timber production is plantations through small sawlog-size stands in the mixed conifer and hardwood-conifer forest types. Manage these stands on a short rotation schedule of 50 to 120 years. The remaining land in the MA will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A Recreation Opportunity Spectrum - Routed natural
- B Visual Quality Objective - Partial retention for the immediate foreground along the Pliocene Ridge Road and middle ground of Highway 49, modification for the remainder of the area. Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have herein assigned the modification VQO.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Off-Highway Vehicle Restrictions - Designated routes only, except closed in wildlife areas such as Plum Valley, Lohman Ridge, and Studhorse Canyon (November 1 - May 1). This restriction can be amended if weather conditions are such that deer are not on the winter range.
- E Forestwide Standards & Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A5 Restricted OHV
- A6 Closed OHV
- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 **Overstory Removal Cutting Method**
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 **Special Cutting**
- E9 **Special Cutting - Urban/Rural/Wildland Interface**
- E10 **Artificial Stand Reestablishment**
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G3 Minerals Management - **Leasables**
- G5 Minerals Management - **Saleables**

- J2 Land Adjustments - **Limited**

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L8 Transportation Management Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - **Obliterated**

- P1 Fire Protection - Continuous Fuels
- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Develop a **specific** fire protection and fuels **treatment** plan to protect plantations

Where feasible, stabilize and rehabilitate land **Rows**, unstable **soils**, and **unreclaimed** mining areas. **Obliterate** or stabilize existing unstable roads. Grant National Forest access routes to service **subdivisions** only where the road is determined to be **complementary** to National Forest resource management. Regulate road **access** in Plum Valley and Lohman Ridge to **mitigate** vehicle conflict with critical wildlife cycles in key winter deer range.

The partial retention visual quality **objective** established for the Highway 49 middleground will assure that natural scenic quality is retained.

Protect Camptonville and **Goodyears** Bar's watersupply in Campbell Gulch and Woodruff Creek during management **activities**.

Retain and improve, where possible, key winter deer range.

Develop a coordinated resource management plan with large landowners to integrate National Forest and private land grazing.

Develop spotted owl management plans for **SOHAs** A-1, A-2, B-2, D-2, and F-1.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

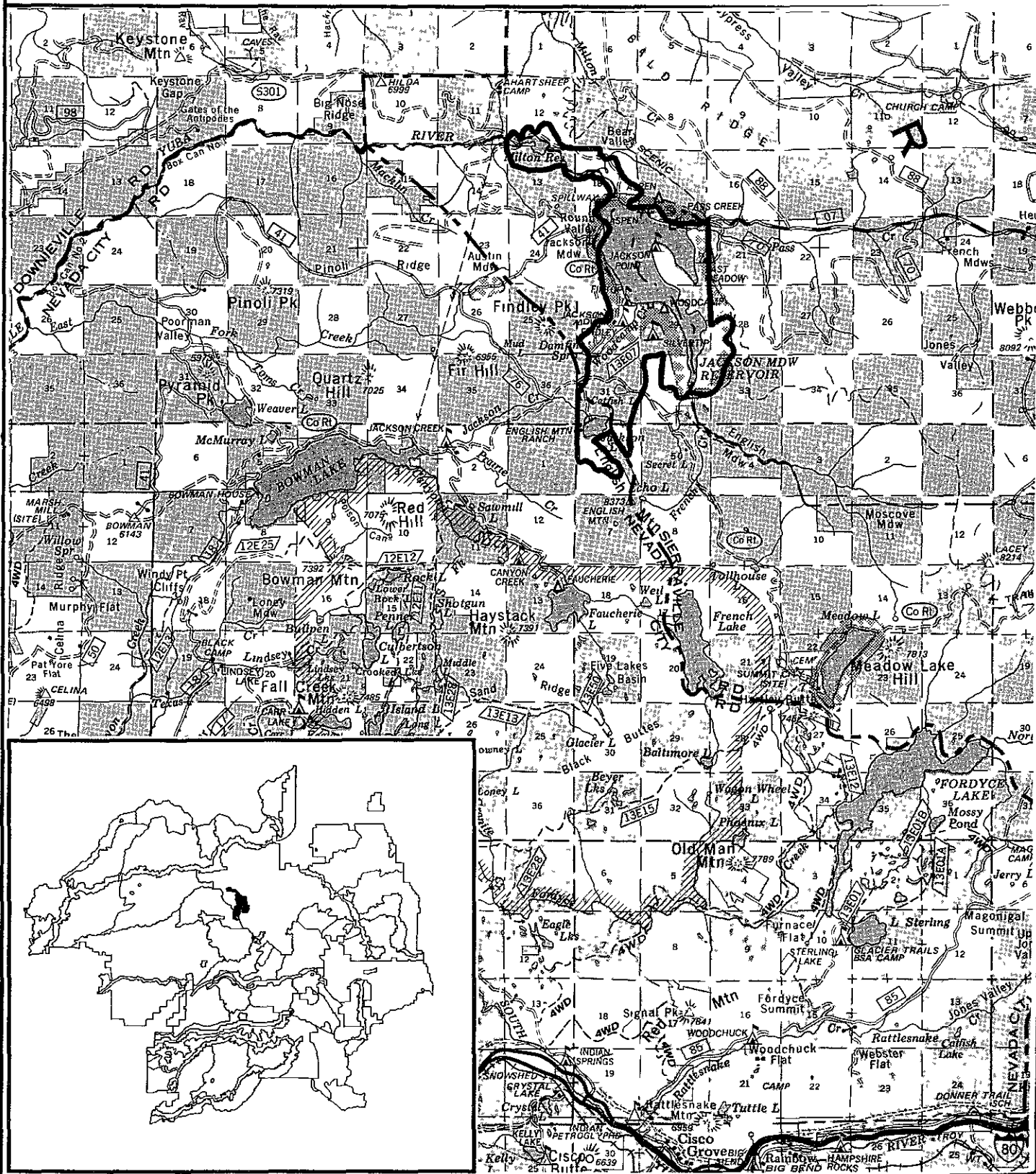
None

1/ Refer to Resource Support Element I and **statewide Standard and Guidelines,**
 2/ Refer to complete Descriptions of **it** **itices n Chapte V.**

MANAGEMENT AREA 025

MILTON-JACKSON

T19N, R13E



025 MILTON-JACKSON

3,722 GROSS ACRES

1,747 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 35 air miles northwest of Truckee. The elevation varies from 5,500 to 6,500 feet. The vegetation is predominantly mixed conifer, red fir, and lodgepole timber types. Small wet meadows are common and scattered throughout the area. There are 167 acres of wetlands. There are 767 acres of unsuitable Productive forest land.

The Middle Yuba River is the primary drainage in this area. Both the Jackson Meadow and Milton reservoirs are on the Middle Yuba River. Both reservoirs are man made and owned and operated by Nevada Irrigation District (NID).

The dam for Jackson Meadow Reservoir was completed in 1965. The water is utilized for electric power, irrigation, and domestic purposes. A large recreation facility was constructed in conjunction with the reservoir, which was financed by funds made available through the Davis-Grunsky Act. The recreation facility consists of 6 campgrounds with 129 campsites, 2 picnic areas, 2 swim beach areas, 2 boat launch ramps, and 2 group camps. This recreation complex has been administered by both the Forest Service and private concessionaire under Granger-Thye permit. It receives very heavy public use.

NID has plans to construct a hydroelectric plant on the dam at Jackson Meadows reservoir sometime in the 1990's.

County jurisdiction over Jackson Meadow is split between Nevada and Sierra Counties. The boundary line is located through the center of the reservoir.

Milton Reservoir is located approximately 2 miles to the northeast of Jackson Meadow Reservoir. This reservoir has no developed recreation facilities but does receive a moderate amount of dispersed recreation use. The California Department of Fish and Game has established special fishing regulations for this reservoir in order to improve fishing experiences for the public.

Primary access to this area is by the Henness Pass Road (Fibreboard Road). The Pacific Crest Trail also passes through this area.

Limited timber management and grazing activities do occur in the area. A portion of the Bowman Cattle Allotment is within this MA.

A portion of spotted owl habitat area I-1 lies within this MA.

The selected wildlife emphasis species within the area include deer, osprey, brown and rainbow trout, and the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Construction of a hydroelectric plant adjacent to Jackson Meadows Reservoir may have an impact on the reservoir and the associated recreation use.

Law enforcement responsibilities are divided between Sierra and Nevada Counties.

There is a concern that the area is reaching its recreation use capacity, causing impacts on the other resources.

There is an issue of protection of aesthetic values.

Dispersed camping has caused resource damage, resulting in restricting camping to developed sites and designated camping areas only.

There is an opportunity to provide additional electrical power through the planned hydroelectric plant.

There is a concern that private-sector administration of recreation facilities could be more effective than U.S. Forest Service administration. Thus, private-sector operation of recreation facilities might be an opportunity for reducing costs expended by the U.S. Government.

III. RESOURCE MANAGEMENT EMPHASIS

The management emphasis for this area will be to enhance developed and dispersed recreation opportunities. Timber management will be regulated through special cutting practices.

The desired future condition is to maintain both developed and dispersed recreation facilities. Milton Reservoir has the best opportunity for additional recreation facilities. Timber management will emphasize maintaining a natural-appearing landscape in forested areas, composed of a continuous tree cover of uneven-aged healthy stands consisting of various age classes (0 to 200 years).

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rooded natural
- B Visual Quality Objective - Retention in foreground areas, partial retention within the developed sites. The sites will, however, meet the retention VQO when viewed as middle ground from travel routes and other occupancy sites. Partial retention in remainder of area
- C Transportation Management Policy - Forestwide Standards and Guidelines apply. Analysis has indicated the need for an increased standard of road to access the Bowman-Faucherie area. Reconstruction of the Grantville Road is proposed (Nevada County road)
- D Off-Highway Vehicle Restrictions - Restricted, motor vehicle travel on designated routes only: over-the-snow vehicle travel open.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-County Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Mher Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation

- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E7 Special Cutting
- E8 Uneven-Age Cutting Method

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasable
- G4 Minerals Management - Leasable Withdrawals

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L6 Trail Construction/Reconstruction - Special Requirements
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- W Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

L12 Transportation Management, Trails - Open
L13 Transportation Management, Trails - Restricted Use

P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Hydroelectric plant: This concern will be addressed through existing Forest Service policies and regulations (S&G 65).

Continue to restrict camping to developed sites and designated camping areas only as needed

Law enforcement jurisdiction: To be resolved through promoting the development of a cooperative agreement between Sierra and Nevada Counties, which will allow each county to be able to respond to problems outside of their county in this area

The area is reaching existing recreation facility capacity. The CDFG special fishing regulations for Milton Reservoir have resumed in a popular, high quality trout fishery. Recreation use will be monitored. Options to resolve this issue may include development of additional recreation facilities

Protection of aesthetic values. The majority of this area is designated with a VQO of partial retention and retention, which will aid in protecting the aesthetic values associated with other management activities

Develop a spotted owl management plan for SOHA I-1

VII. SPECIFIC MONITORING AND EVALUATION

Monitor recreation use around Jackson and Milton Reservoirs. Evaluate the effects and determine what is needed to accommodate or restrict the use

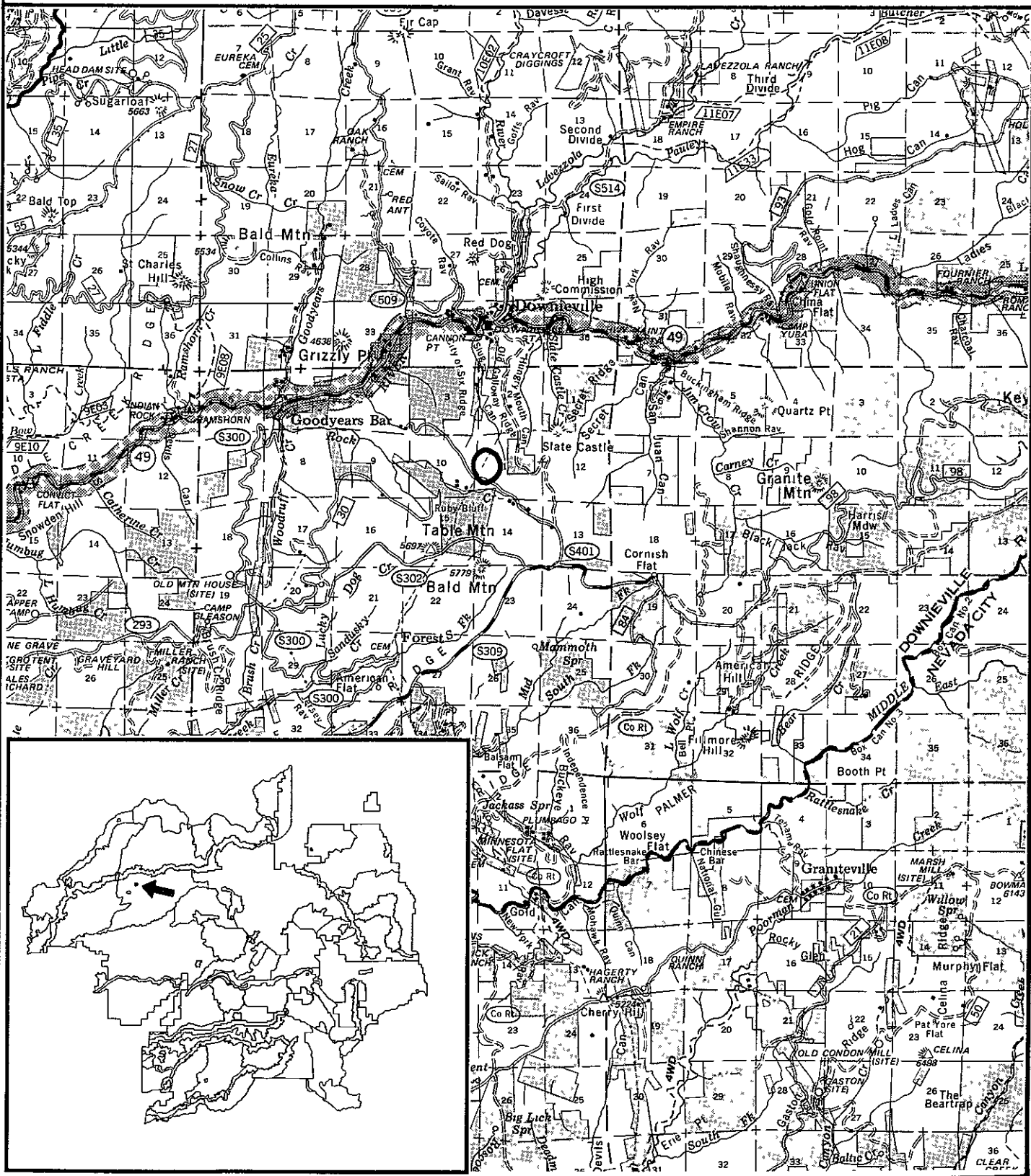
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 026

GALLOWAY

T19N, R10E



026 GALLOWAY

23 GROSS ACRES

23 NFS ACRES

I. DESCRIPTION

This management area (MA) is located atop an unnamed peak 2 miles south of Downieville. Elevation is 5,457 feet Pacific Bell maintains a microwave repeater on this site. Access development is required. Electrical power is available on site, and an electronic site was approved in 1992. Vegetation is low growing brush. Wetland acreage is insignificant. There are 23 acres of unsuitable timber land.

There are no selected emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Compatible electronic uses will be placed on this site or on other approved electronic sites.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is use as an electronic site.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural
- B. Visual Quality Objective - Meet partial retention if seen from Highway 49. Modification for the remainder of the area. This VQO allows management activities to dominate the characteristic landscape; however, structures and roads should remain visually subordinate when viewed in background. Modification VQO will be applied as the base level or minimum acceptable visual quality.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Designated routes only
- E Forestwide Standards & Guidelines - All apply
- F Develop Electronic Site Plan - Galloway Electronic Site Plan

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted O W
- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- J2 Land Adjustments - Limited
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The electronic site plan provides guidelines and direction for management and use of the area. Revise and update this plan for new development as needed. The Forest Service and the Federal Communications Commission will evaluate all new applications for compatibility with existing uses. Incompatible frequencies will be denied.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

None

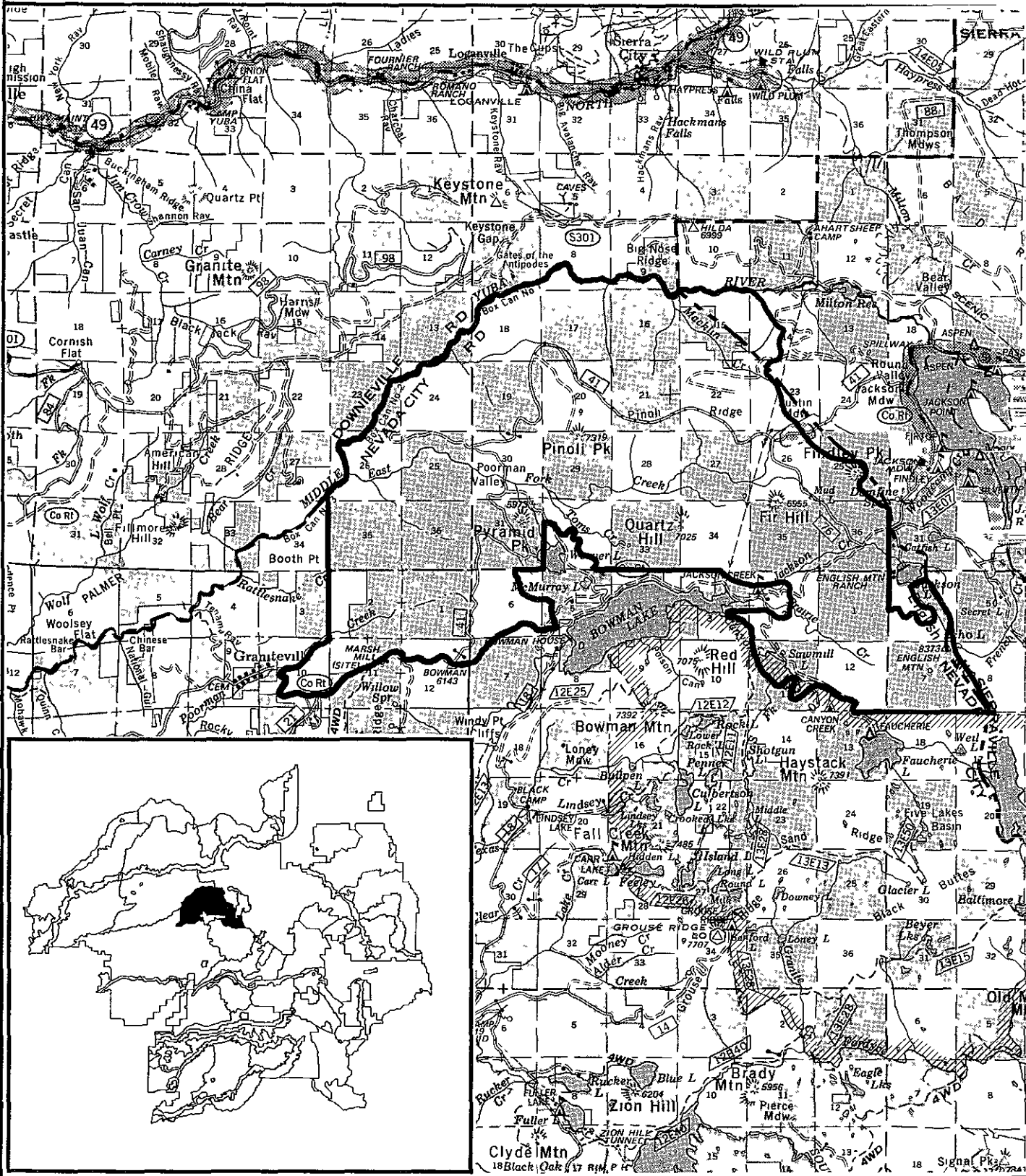
- 1/ Refer to Resource Support Element Maps | For Standards and Guidelines
- 2/ Refer to Site Descriptions of | For in Chapter V

MANAGEMENT AREA NO. 27 WAS NOT USED

MANAGEMENT AREA 028

PINOLI

T19N, R12E



028 PINOLI

22,653 GROSS ACRES

10,549 NFS ACRES

I. DESCRIPTION

This management area (MA) is located northeast of the town of Graniteville in the Middle Yuba River Drainage. Elevations range from 4,000 feet on the Middle Yuba River to 8,300 feet on English Mountain.

Approximately 50 percent of the MA is National Forest System land, the remainder is in private and State ownership. Land exchanges in process will result in the transfer of more National Forest System land to private ownership. A large timberland owner is the primary private landowner in the eastern half, with multiple ownerships characterizing the western half. On National Forest System lands, the vegetative cover is approximately 84 percent productive forest lands, with white and red fir predominating. Mixed fields of shrubs and hardwoods account for 7 percent.

About 92 percent of the productive forestland is accessed, with the county road between Graniteville and Jackson Meadows Reservoir being the major arterial road in the area. Dispersed recreation is only moderate due to the remoteness, rugged terrain, and limited outstanding features. Hunting, fishing, and OHV use on old jeep trails and logging roads are the main recreational uses in the area. The Middle Yuba River Canyon was in the PARE I study but was not selected for the PARE II study.

Lahontan cutthroat trout, a threatened species, exist in three locations in the MA. Macklin Creek is closed to fishing to protect the integrity of the species. The Draft Management Plan for Lahontan trout, coordinated with the Forest and the California Department of Fish and Game, is currently being reviewed. The State owns and administers the Macklin Creek Ecological Area, in portions of Sections 15 and 22, to aid protection of the species. Macklin Creek has been monitored to determine effects of management activities.

There are 720 acres of wetlands in the management area, and a small deer migration corridor on the west side. Areas bordering streams containing Lahontan cutthroat trout are considered unsuitable for regulated timber management.

The selected emphasis species are deer, brown, rainbow, and Lahontan cutthroat trout, pileated woodpecker, goshawk, spotted owl, and the riparian and meadow groups. This area contains key fawning habitat for deer and a holding area. It also includes a SOHA (M-1).

A portion of the English Cattle Allotment, administered by Sierraville Ranger District, extends into the management area.

Mining activity is confined mostly to the Middle Yuba River, with some claims on English Mountain. Due to the lack of road access to the river, most mining equipment is ferried in by helicopter and on foot.

A 60 KV power transmission line (Haypress-Bowman Hydro Electric Power Project) enters the MA north of Austin Meadows and runs southwest to the Bowman Lake dam site (MA #39). A second KV power line is proposed (East Fork Creek Hydro Electric Power Project) between East Fork Creek (Section 25, T.19N, R.11E) and Bowman Lake dam site.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Success of artificial regeneration is difficult to predict on south aspects and droughty soils. Timely location of landlines between private and Forest land and acquisition of needed right-of-ways are concerns for timber management.

There is an opportunity to improve habitat for deer, particularly in the fawning and holding areas. Reducing disturbance to deer in the holding area is especially desirable. Retaining the low-standard roaded nature of the area could aid in maintaining the quality of the fishery, particularly in the Middle Yuba River. Increased mining activity, however, could have adverse effects on the high-quality fishery and recreation activities in the Middle Yuba River canyon area. Ensuring the viability of the Lahontan cutthroat trout in Macklin and other creeks, as well as the successful breeding of spotted owls east of Graniteville, are concerns. The many acres of wetlands need to be maintained and improved for wildlife values, especially large areas like Austin Meadows.

Substantial improvements to the county road system would be incompatible with recreation management needs at Bowman Lake, where a relatively primitive recreation experience is enjoyed.

This MA contains an area (Macklin Creek) identified by the National Park Service as a potential National Natural Landmark.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated, even-age timber management. Emphasize range management on the transitional range created by timber harvest. Emphasize dispersed recreation.

Emphasize wildlife and watershed values when managing in streamside management zones and in important wildlife habitat areas (the SOHA, near streams with Lahontan cutthroat trout in deer fawning and holding areas). Attempt to acquire privately owned meadowlands near Macklin Creek to further protect the Lahontan cutthroat trout. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as special-use permit areas.

Emphasize shelterwood cutting or small clearcuts primarily on south slopes, where droughty soils exist, and in areas where desired vegetative composition presents high risks for regeneration success.

Wild and Scenic river values will be protected for the Middle Yuba River until such time as the suitability study is completed and new management emphasis developed. The RNR is potentially eligible for 'wild', 'scenic', or 'recreation' classification.

Maintain the existing nonmotorized public access to the Middle Yuba River, with administrative access roads of a standard high enough only for necessary management practices. Maintain other roads in the MA at a low standard to be compatible with the dispersed recreation goals for the area.

Maintain the existing habitat for Lahontan cutthroat trout. Maintain and improve wetlands as conditions warrant for fish and wildlife habitat management.

Change the older age structure of shrubs to a varied age structure dispersed throughout the management area.

The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands will be similar in condition to the red fir and lodgepole stands. The desired future condition for other mixed conifer lands managed for timber production is plantations through small sawlog-sized stands of the mixed conifer type. Manage these stands on a short rotation schedule of 50 to 120 years. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Avoid natural except semi-primitive motorized along Middle Yuba River
- B Visual Quality Objective - Modification except partial retention for foreground areas as viewed along Graniteville and Faucherie Roads and in middleground areas as viewed from MA's 39 and 41.
- C Transportation Management Policy - Close roads into Macklin Creek watershed and Middle Yuba River. In the remaining area the Forestwide Standards and Guidelines apply.
- D Mf-Highway Vehicle Restrictions - Macklin Creek Drainage and Austin Meadows are closed. Designated routes only from Pinoli Peak and Pyramid Peak on the west to the eastern boundary of the Management Area, open to over-the-snow. Seasonal closure in the deer holding area when the deer are using the area. The western third of the Management Area is open.
- E Forestwide Standards and Guidelines - All apply
- F Specific Standards and Guidelines - Acquire private lands in the Macklin Creek area to complement management of Lahontan cutthroat trout to ensure species viability.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-country Skiing
- A4 Open OHV
- A5** Restricted OHV
- A6 Closed OHV
- AS Developed Recreation & Interpretive Service Sites Management, Public Sector
- A11 Recreation or IS Site Construction or Rehabilitation

- C1 Stream Fisheries- Nonstructural Improvement and Maintenance
- C2 Stream Fisheries- Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6** Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8** Structural Habitat Improvement and Maintenance
- C9** Wet Meadow Habitat Improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D4** Range Management - Transitory Range Type (Intensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8** Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2** Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5** Commercial Thinning - Regenerated Stands
- E6** Seed Tree Cutting Method
- E7** Special Cutting
- E8 Uneven-Age Cutting Methods
- E9 Special Cutting - Urban/Rural/Wildland Interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F3 Flow Timing Improvement
- F4 **Soils** Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables

- J2** Land Adjustments - Limited

- L1 Timber Access Road Development - Road **Construction/Reconstruction**
- L2** Multi-resource Road Access Development - Road **Construction/Recon**
- L5** Trail **Construction/Reconstruction** - Foot, Equestrian and Trailbike
- L6 Trail **Construction/Reconstruction** - Special Requirements
- L8** Transportation Management, Roads - Open
- L9** Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Use small clearcuts (generally less than 10 acres), shelterwood cutting, and other practices to expose less ground area and facilitate natural regeneration on southerly aspects and droughty soils. Identify landline needs early in project development to allow time to resolve conflicts should they occur.

Coordinate with miners to ensure operating plans provide fishery protection.

All capability areas bordering streams containing Lahontan cutthroat trout are unsuited for regulated timber management. Restrict vehicle access from the deer holding area.

Develop a spotted owl management plan for SOHA M-1.

The Mackin Creek area will be managed for the Lahontan cutthroat trout but not as a special area (National Natural Landmark).

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitor water quality, aquatic insect and fish populations in streams containing Lahontan cutthroat trout to ensure the habitat continues to support a viable population.

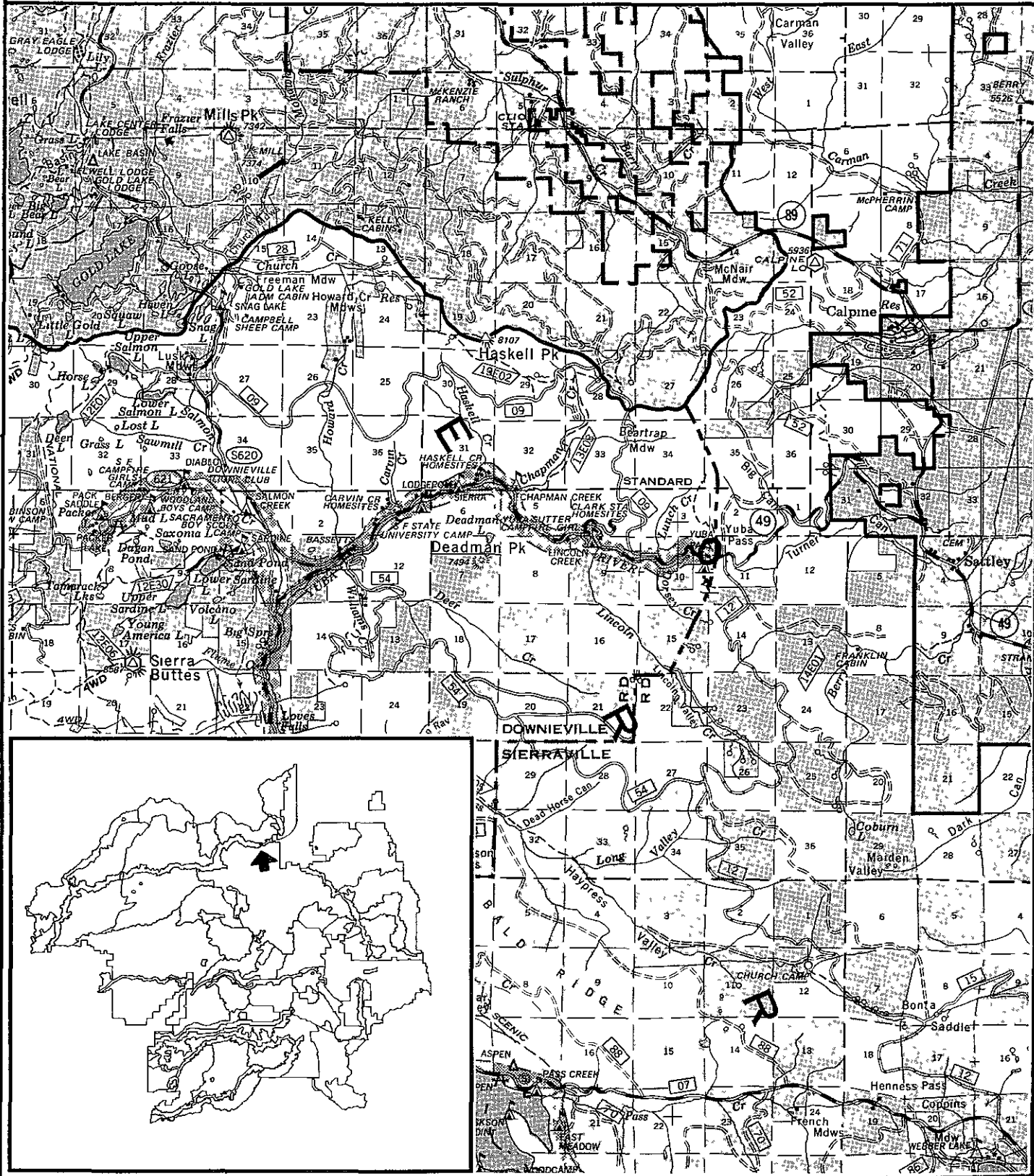
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 029

PASS

T20N, R13E



029 PASS

13 GROSS ACRES

13 NFS ACRES

I. DESCRIPTION

This management area (MA) is located in a small saddle north of Highway 49 near Yuba, approximately 4 miles west of Sattley. Elevation is 7,000 feet. The area has been used by Sierra County Sheriff's Department since 1957. Existing improvements include 2 small buildings and an antenna tower. Records are available to the site. The electronic site was approved in 1975.

Spotted owl habitat area H-1 is within this MA.

There are no wetlands or selected emphasis species. There are 13 acres of unsuitable productive forest land.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as foreground from Highway 49.

There is an opportunity to permit compatible electronic uses on National Forest System land at this and other approved electronic management areas.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is use as an electronic site. Permits will require that facilities minimize visual impact.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINE 1/

- A. Recreation Opportunity Spectrum - Rural
- B. Visual Quality Objective - Partial retention, as viewed from Highway 49.
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D. Mf-Highway Vehicle Restrictions - Designated routes only.
- E. Forestwide Standards & Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- J2 Land Adjustments - Limited
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The electronic site plan provides guidelines and direction for management and use of the area. Revise and update this plan for new development as needed. The Forest Service and Federal Communications Commission will evaluate all new applications for compatibility with existing uses. Incompatible frequencies will be denied.

The partial retention VQO, as viewed from Highway 49, will assure that land uses do not degrade the scenic quality of the Highway 49 corridor.

Develop a spotted owl management plan for SOHA H-1.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

None

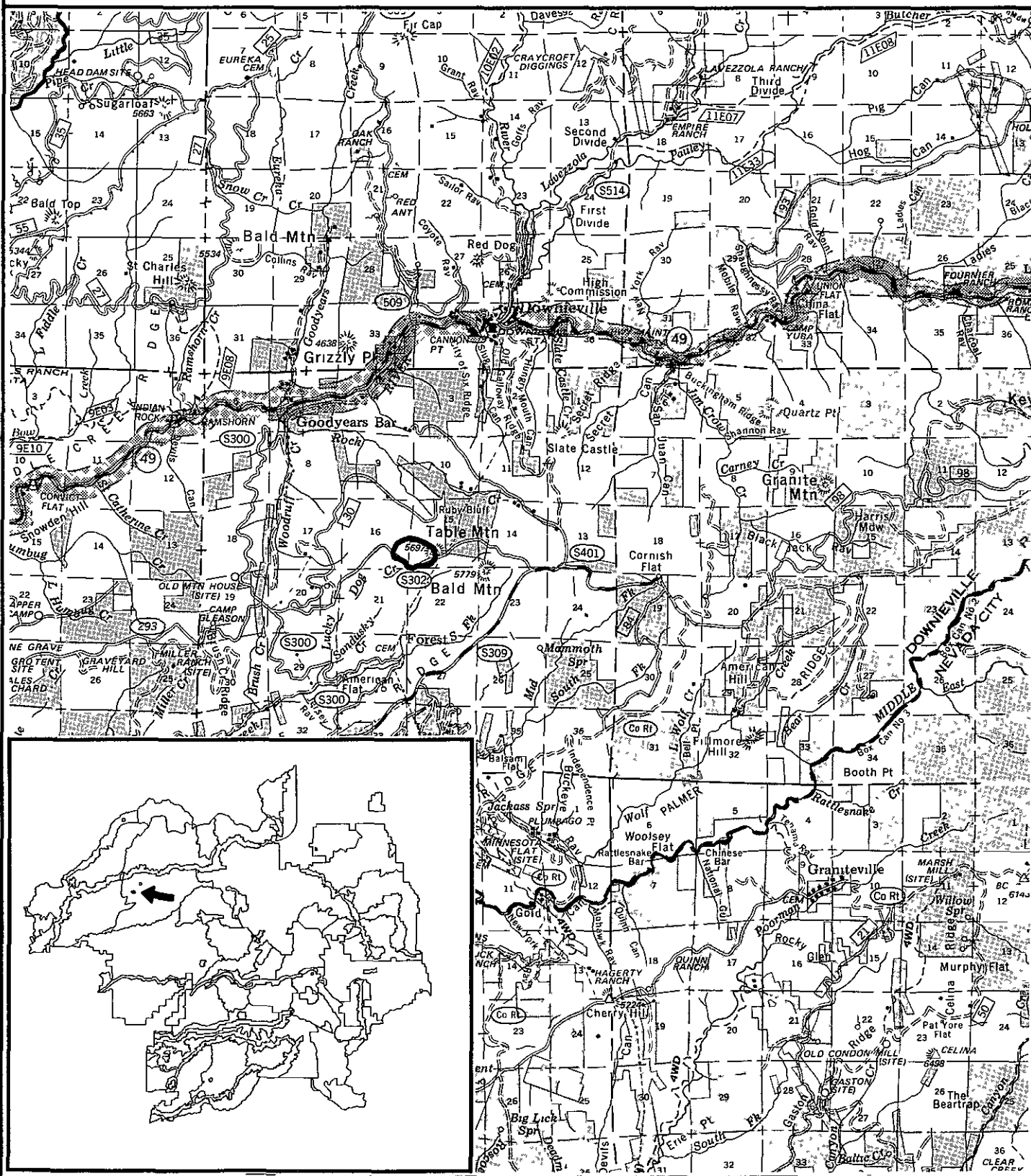
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 030

RUBY

T19N, R10E



030 RUBY

16 GROSS ACRES

16 NFS ACRES

I. DESCRIPTION

This management area (MA) is located atop Table Mountain, 3 1/2 miles southwest of Downieville. The elevation is 5,697 feet. Ruby Bluff has been used as a Forest Service radio repeater site since 1953 and by the California Highway Patrol since 1963. Access and electrical power are available at this site. Existing improvements include 3 small communication equipment buildings, 2 antenna poles, and antenna towers. Vegetation is brush and young white fir. An electronic site plan was approved in 1977.

There are no wetlands. There are 16 acres of unsuitable productive forest land.

There are no selected emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is an opportunity to concentrate compatible electronic uses of National Forest System land at this and other approved electronic management areas.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is use as an electronic site. Permits will require that facilities minimize visual impact. Compatibility of uses will also be considered when evaluating applications for special-use permits. Incompatible electronic uses will not be permitted to occupy the site, existing uses will be given preference. The MA is unsuitable for regulated timber production.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural
- B Visual Quality Objective - Meet partial retention if seen from Highway 49. Modification for the remainder of the area. This VQO allows management activities to dominate the characteristic landscape, however, structures and roads should remain visually subordinate when viewed in background. To meet these requirements will, in some cases, require significant efforts at visual mitigation and project-level involvement of the Forest landscape architect. Some areas, however, might require very little mitigation to satisfy the modification objective. Where proposed installations in this latter category are in a visually prominent location, maximum practical mitigation will still be implemented even if the resultant visual quality will exceed the objective. The modification VQO will be applied as the base level or minimum acceptable visual quality.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Mf-Highway Vehicle Restrictions - Designated routes only
- E Forestwide Standards & Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- J1 Land Adjustments - Retain and Acquire
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The electronic site plan provides guidelines and direction for management and use of the area. Revise and update this plan for new development as needed. The Forest Service and Federal Communications Commission will evaluate all new applications for compatibility with existing uses. Incompatible frequencies will be denied.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

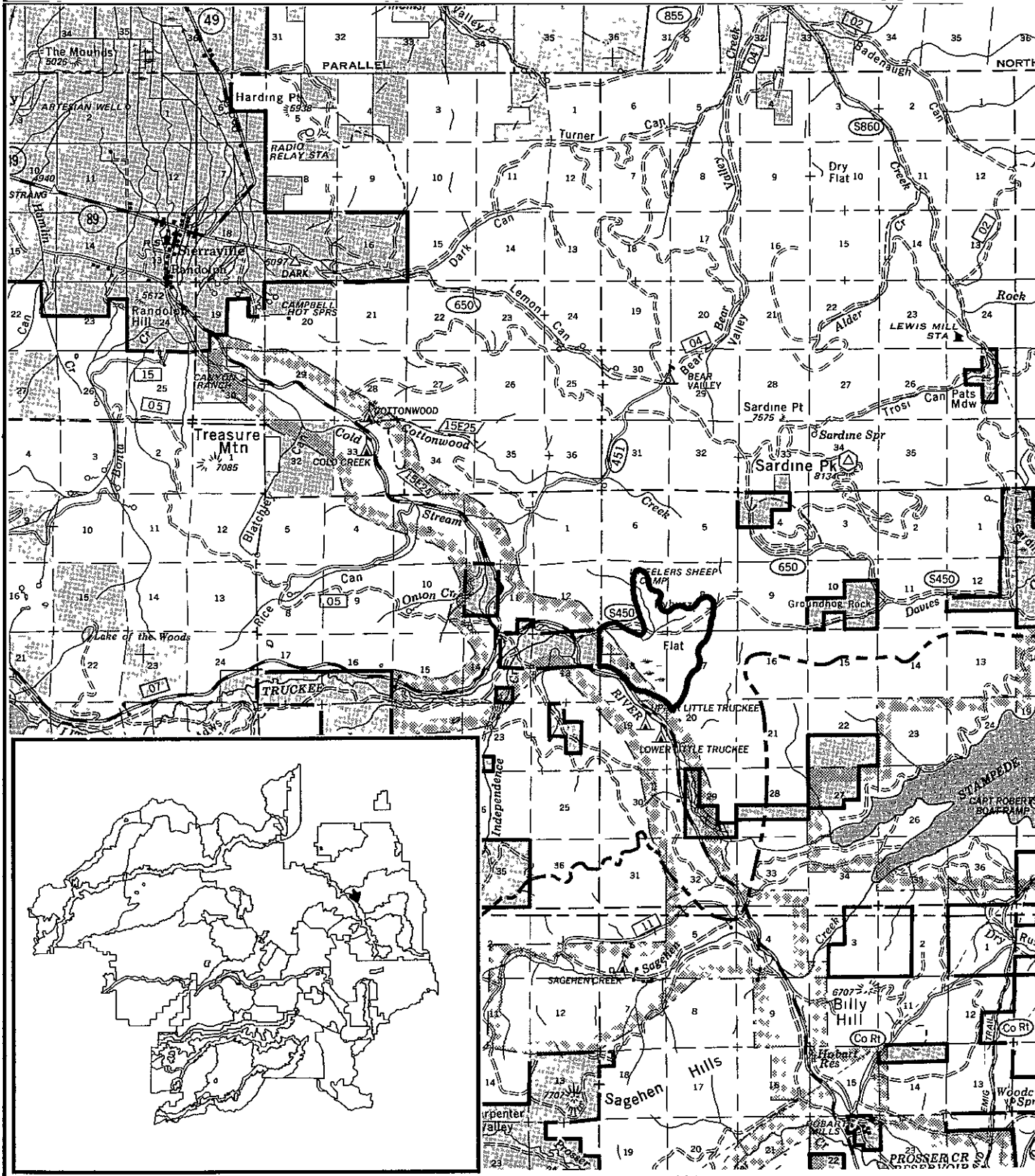
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 031

KYBURZ

T19N, R16E



031 KYBURZ

928 GROSS ACRES

928 NFS ACRES

I. DESCRIPTION

This management area (MA) is approximately 10 miles southeast of Sierraville and 4 miles southwest of Sardine Peak. It is accessed from Highway 89 by County Road 19N03, which goes through the MA. The unit is relatively flat with elevations ranging between 6,300 feet and 6,400 feet. The central feature in the area is Kyburz Marsh. The marsh is filled by winter precipitation and spring run-off, providing a nesting area for several species of waterfowl and shorebirds. By late summer, the marsh dries into a wet meadow. Dominant vegetation in the marsh is sedges, bulrushes, and spikerushes. Surrounding the marsh, the flats are dominated by sagebrush, forbs, grasses, and scattered Jeffrey pine. There are 300 acres of wetlands. There are 333 acres of unsuitable productive forest land.

The management area contains an important prehistoric and historic area. Road 19N03 follows the route of the old Henness Pass Road, used for stages and freight since the 1850's. The site of a former stage stop is within the management area. The surrounding area was logged in the 1920's and traces of the old logging roads cross the unit.

Sheep have grazed in the management area since the early 1900's, with Wheeler Sheep Camp being a historic camp area. Sheep graze in the MA from June 16 to September 30 as part of the Kyburz Allotment.

A cooperative wildlife project between the Forest Service and the California Department of Fish and Game was initiated in 1981 to improve waterfowl nesting habitat. This project included building nesting islands, installing nesting platforms, and blasting feeding potholes.

Military units use the Kyburz area for field training exercises and maneuvers. These military units operate under a Memorandum of Understanding with the Forest Service.

Selected emphasis species are deer, and the wetlands and meadows groups. The area contains key fawning habitat for deer.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Sheep grazing on the Kyburz Allotment has the potential to trample and damage the recently constructed waterfowl nesting islands.

Meadow damage and waterfowl disturbance is occurring from the indiscriminate use of off-highway vehicles.

Military exercises near the marsh have the possibility of damaging the waterfowl improvements and disturbing the nesting birds. There is an opportunity to improve and expand the habitat for waterfowl and other marshland birds and also key fawning habitat for deer. Waterfowl projects involving water storage have been proposed. However, water rights in the Little Truckee River watershed have not been settled.

Forest visitors camp in and adjacent to the cultural resource sites. These cultural resource sites are being damaged and vandalized.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 89. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize additional habitat improvements. Protect and improve the wildlife resource, while permitting grazing.

Preserve cultural sites.

Unscheduled timber harvest may be practiced on lands unsuited for timber production. Coordinate vegetative management with wildlife goals.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum- Roded natural
- B Visual Quality Objective - Partial retention
- C Transportation Management Policy - Seasonal closure on all roads, build no new roads.
- D Off-Highway Vehicle Restrictions- Restricted summer and winter except all cross-country and over-the-snow vehicle travel is prohibited from February 1 to July 15 Designated routes for fuelwood cutting only
- E Forestwide Standards and Guidelines. All apply except 31, 32, and 33
- F Specific Standards and Guidelines not stated above - Prohibit camping to protect cultural resources and waterfowl nesting sites Sheep grazing with a herder is preferred if the allotment is turned into a cattle allotment, fence the wildlife habitat project area

V. AVAILABLE MANAGEMENT PRACTICES 2/

- AI Nordio Cross-Country Skiing
- A5 Restricted OHV
- A6 Closed OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector

- C8 Structural Habitat improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Coordinate livestock distribution to protect waterfowl habitat projects Develop alternate areas for forage and water to compensate for any losses

Restrict OHV use

Phase out military use in the management area Alternate areas are currently described in the Memorandum of Understanding The use of alternate locations should be discussed with the military

Prohibit camping near cultural sites Enhance interpretation opportunities of cultural sites

Apply for water rights through the California State Water Resources Control Board

The partial retention VQO assures management activities will maintain the scenic quality of the Highway 89 corridor

VII. SPECIFIC MONITORING AND EVALUATION

Monitor effectiveness of waterfowl habitat improvement projects

Monitor effectiveness of cultural resource protection.

Monitor OHV restrictions

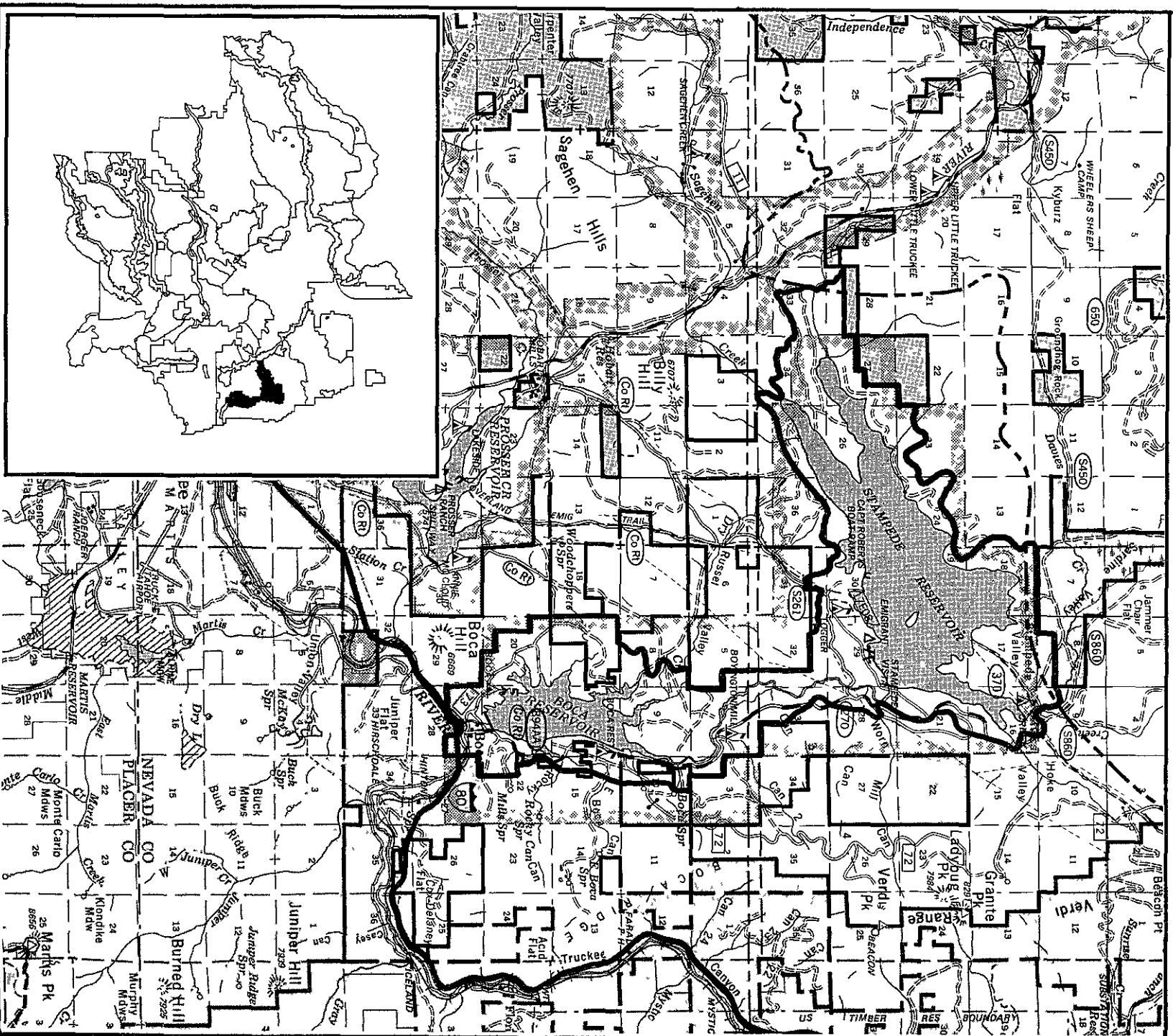
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 032

STAMPEDE-BOCA

T19N, R17E



032 STAMPEDE-BOCA

13,380 GROSS ACRES

13,380 NFS ACRES

I. DESCRIPTION

This management area (MA) represents the immediate zone of influence of the Stampede and Boca Reservoirs and the Little Truckee River, which connect the two. The terrain is gentle to rolling, primarily covered with eastside pine and sagebrush.

The area is heavily used for both dispersed and developed recreation purposes. Four family campgrounds, one group campground, and a vista are present. Planning for additional facilities is underway. The area receives heavy winter recreation use, including ice fishing, snowmobiling, and off-track nordic skiing. There is the potential for conflicts between various user groups (i.e., hikers-OHV, motorized-nonmotorized winter use). These conflicts are currently being controlled by the Tahoe National Forest Mf-Highway Vehicle Plan.

Major portions of the watershed were damaged by the 1960 Donner Ridge Fire and the 1977 Freeway Fire. Intensive watershed stabilization efforts are ongoing under agreement with the Bureau of Reclamation. Most of the National Forest System lands damaged by these fires have been reforested. A land exchange between the Forest Service and the Hopkins Realty Trust in the early 1980's resulted in adding lands in this area to the National Forest System.

A narrow triangle of land below and including Boca Dam is managed as a reclamation zone by the Forest Service under a cooperative agreement with the Bureau of Reclamation. This area is closed to all public entry. The remainder of the lake and shoreline is managed as a recreation zone by the Forest Service under the same agreement.

This MA contains habitat suitable for willow flycatchers. Bald eagles and osprey use the reservoirs and the Little Truckee River between the reservoirs. A pair of bald eagles nested and successfully fledged two young near Stampede Reservoir in 1986. Two artificial nesting platforms have been constructed along the shores of Stampede Reservoir. Two deer migration routes cross this MA, one along the south shore of Stampede Reservoir, and the other through the Boca Reservoir general vicinity. There is a fisheries habitat improvement project on the Little Truckee River between Stampede and Boca.

Selected emphasis species are bald eagle, osprey, rainbow, brown and brook trout, Kokanee salmon, and the wetland and riparian groups.

The area is accessed primarily by four county roads: Nevada County 894AA1, Sierra County S860, S270 and S261.

There are 544 acres of wetlands, and 6,312 acres of unsuitable timber land.

The area contains two National Register Archaeological Districts. The Overland Emigrant Trail, aka Emigrant Trail, and the Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area.

Several special-use permits exist that allow a variety of uses. Including transmission lines, waterlines, roads, and a water ski race course. There are portions of the Boca, Bickford, and Kyburz range allotments in the area.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The demands for recreation uses in this area exceed facility capabilities at Boca Reservoir. It is probable that demand will continue to grow during the planning period.

There are potential conflicts between user groups, such as hikers and OHV enthusiasts, snowmobilers and off-track Nordic skiers, water skiers, fishermen, and sailors. Off-highway vehicle violations occur at rates and degrees of severity that make OHV restrictions difficult to administer.

Protection of willow flycatcher habitat is a management concern. There is an opportunity to enhance the area for osprey and bald eagle nesting by constructing artificial nests. There is also the opportunity to continue improvements to the fishery habitat in the Little Truckee River below Stampede Dam.

Dispersed camping, which has caused resource damage, resulted in restricting camping to developed sites and designated camping areas throughout this management area.

High springtime releases from Stampede Reservoir for downstream needs in Nevada will continue to result in undesirable flows in the Little Truckee River and a reservoir water level at Stampede that is often below the desired recreation pool during the peak summer use period. This also involves watershed stabilization concerns. In addition, very high springtime releases by the Federal Watermaster have resulted in erosion and have changed the stream channel geometry in the Little Truckee River.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middleground from Highway 89 and as seen as foreground and middleground from the reservoirs and major travel ways that serve the area. State Highway 89 is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

The opportunity exists to continue rehabilitation of the burned areas through coordinated timber management and visual quality practices. Both scenic and watershed damage can be improved by special cutting and revegetation efforts.

There is an opportunity to provide for interpretation of cultural resources in conjunction with recreation development. There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation management activities.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to develop and protect the recreation, watershed, and visual qualities.

Manage the vegetation using techniques to rehabilitate or enhance the potential character where the vegetation has been damaged by fire or biological forces. Convert wildfire-related brushfields and understocked plantations to fully stocked timber stands, particularly on the Donner and Freeway Burns.

Develop and implement a road and wheel track management plan through cooperation with the California Department of Parks and Recreation's OHV program. Obliterate, stabilize, and revegetate surplus roads and wheel tracks that are not needed for administrative or public uses. Continue to stress resource protection through prevention, law enforcement, and public education. Restrict summer motorized travel to designated routes only.

Emphasize interpretation of historic and archaeological sites in conjunction with recreation development. Coordinate this with the need to interpret the Boca Townsite, just to the south of this management area in MA 51 (Hirschdale). Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include this trail into the National Historic Trail System.

The existing and proposed developed recreation sites and the reclamation zone are unsuitable for regulated timber production. Timber management will be regulated through special cutting practices on suitable timber management lands.

Provide adequate areas or facilities for both motorized and nonmotorized recreation use through recreation planning. Consider the development of large overnight family and group facilities as well as day-use family and group facilities at Boca Reservoir as the Forest's top development priority. Continue efforts to acquire desirable releases from Stampede Reservoir and to maintain desirable lake levels for recreation needs.

Retain and improve the bald eagle and willow flycatcher habitats. Continue to enhance fisheries in the Little Truckee River.

Manage the sagebrush and grass areas for forage production.

The desired future state is characterized by developed recreation sites and by dispersed recreation areas adjacent to the reservoirs and river. The desired future state in the forested areas is continuous tree cover of mixed-age classes resulting from the special cutting practices.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rooded natural
- B Visual Quality Objective - Retention in foreground as viewed from reservoirs and major travel ways that serve the area. Partial retention within the developed sites. The sites will also meet the partial retention VQO when viewed as middleground from major travel routes and other occupancy sites. Partial retention for remainder of area.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply if new local timber access roads are developed, they will be closed to public use to reduce maintenance costs.
- D Off-Highway Vehicle Restrictions - Designated routes only in summer. Open over-the-snow.
- E Forestwide Standards and Guidelines - All apply.
- F Other - Law enforcement will emphasize protection of the public and of public facilities.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management. Public Sector
- A3 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D4 Range Management - Transitory Range Type (Intensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E7 Special Cutting
- E8 Uneven-Aged Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multi-Resource Road Access Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L6 Trail Construction/Reconstruction - Special Requirements
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trail - Open
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Complete a master plan for recreation development and construct the first phase during the first decade. Identify through recreation planning areas to be closed or restricted to motorized summer and winter use. Emphasize recreation and visual objectives for all resource management activities.

Encourage the County to pass reservoir boat speed limit and noise limit ordinances to assist in reservoir recreation management.

Identify and retain all bald eagle and willow flycatcher habitat.

Emphasize public information in developing facilities. Continue law enforcement emphasis.

Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in "The Overland Emigrant Trail Through The Tahoe National Forest" until more refined evidence is disclosed.

Continue to restrict camping to developed sites and designated camping areas throughout the management area.

Acquire desirable releases from Stampede Reservoir and maintain desirable lake levels through coordination and agreement with Bureau of Reclamation, California Department of Fish and Game, and various other downstream interests.

Sacrifices of short-term visual objectives will be made to enhance long-term visual quality as burn scars are rehabilitated.

Because of the flat terrain and open nature of the area, fisherman, fuelwood cutters, hunters, and recreationists with other interests generate a great deal of motorized travel both on and off-highways. A large volume of roads and unclassified wheel tracks have resulted from this travel. There is a high rate of resource damage that has occurred primarily in early winter and spring. Impacts to wet meadows and rutting of roads commonly occur. If uncontrolled, resource damage is likely to continue.

VII. SPECIFIC MONITORING AND EVALUATION

Evaluate effectiveness of fish habitat improvement. Evaluate watershed stabilization projects. Monitor bald eagles and willow flycatchers to determine population trends.

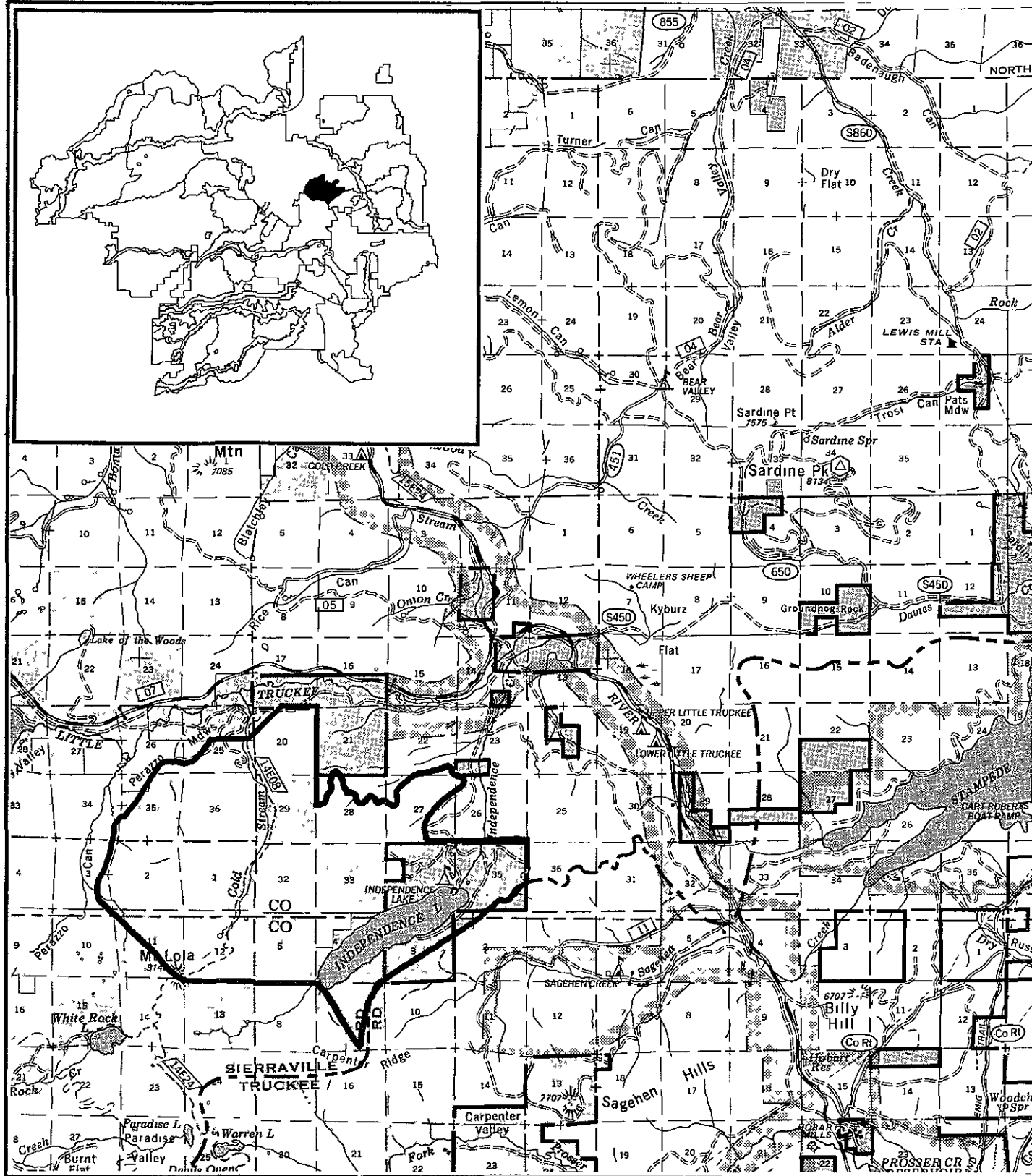
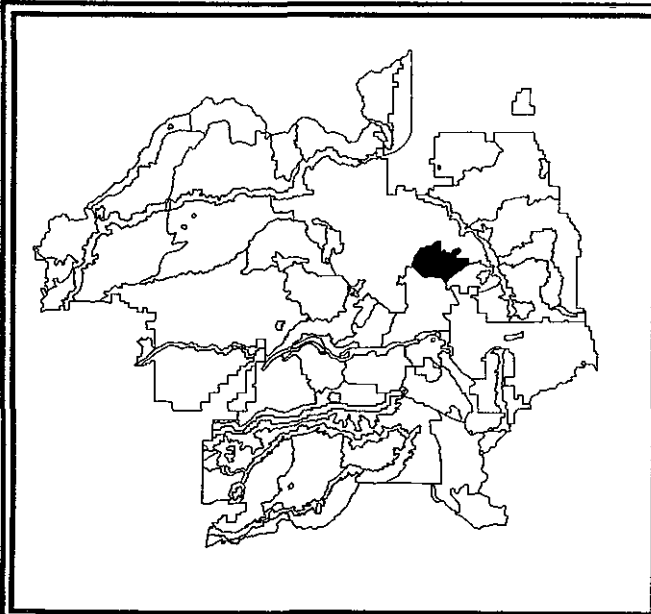
Evaluate O W use to determine effectiveness in reducing potential conflicts between motorized and non-motorized users.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 033

LOLA

T19N, R15E



033 LOLA

9,054 GROSS ACRES

4,932 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 15 miles northwest of Truckee. The elevation varies from 9,143 feet at Mt. Lola to 6,600 feet at the Old Henness Pass Road.

The vegetation within the area is dominated by red fir timber below 8,000 feet elevation and old growth western white pine and mountain hemlock stands above 8,000 feet. There is one large meadow and many small meadows scattered throughout the area. There are 610 acres of wetlands. There are 2,921 acres of unsuitable productive forest land.

The area has the potential to support a large winter sports complex as well as many other recreation uses. In recent years the Forest Service has received two proposals for major winter sports and year-round recreation complexes in this area. Thus far none of these proposals has been approved but interest still remains today for developing the area. The popular Mt. Lola Trail passes through this area.

There are portions of three livestock grazing allotments within this area. The White Rock Allotment has been closed for grazing due to resource considerations for the past 5 years. Two other allotments, Perazzo Meadows and Independence, are managed for cattle grazing.

There are many roads located throughout the area, which are managed primarily through cooperative agreements between the Forest Service and large private land owners. These owners manage their land for timber production. The major access to this area is under the jurisdiction of Sierra County.

The selected wildlife emphasis species for the area include deer, brook and brown trout, and the riparian, meadow, and wetlands groups.

The headwaters of Perazzo Creek are in this MA. Lower portions of this creek are proposed for introduction of Lahontan cutthroat trout.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

One issue is the development of winter sports facilities. At the time of the first two project proposals in the mid 1970's, the proposals were controversial because of the potential and possible impacts on the quality of wildlife habitat.

The potential of wildlife habitat in the area, and the potential to introduce Lahontan cutthroat trout in Perazzo Creek. The potential for fish catcher habitat, is a concern. There is a possibility to improve fish and wildlife habitat.

There is a concern for the poor health of the timber and the issue to age insect infestation and disease.

Due to the extensive timber harvest that occurred on adjacent private lands, there is a concern for cumulative effects.

Protection of scenic and dispersed recreation values is also a concern.

There is an opportunity to develop a winter sports facility and/or a complex in response to public demand in the area of private owners.

III. RESOURCE MANAGEMENT EMPHASIS

The management emphasis is to maintain the recreational attributes of the area that include both summer and winter attractions. These attributes may be enhanced by some level of development depending on need and public demand.

Emphasize timber long rotation (150+ years) management.

Permit livestock grazing.

Emphasize opportunities to improve fish and wildlife habitat including maintaining the potential in Perazzo Creek to introduce Lahontan cutthroat trout.

The desired future condition is characterized by an area that can be enjoyed by recreationists on a year-round basis. The essential facilities, which may vary from trails, designated routes, interpretative signs to developed campgrounds, winter sports facilities, etc. are in place to manage this use. The desired future timber condition is a mosaic of timber stands.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural with rural around ski base facilities. If developed
- B Visual Quality Objective. Partial retention. Modification within the developed sites. The sites will, however, meet the partial retention VQO when viewed as middle ground from travel routes and other occupancy sites.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Mf-Highway Vehicle Restrictions - Designated routes only. Over-the-snow vehicle travel open.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A3 Commercial Nordic Cross-country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A9 Recreation Management (Private & Other Public Sector)
- A10 Downhill Skiing
- A11 Recreation or IS Site Construction or Rehabilitation
- A12 Downhill Skiing Planning, ES/EA, Development
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F3 Flow Timing Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management- Locatables
- G2 Minerals Management. Locatable Withdrawals
- G3 Minerals Management- Leasables
- G4 Minerals Management- Leasable Withdrawals

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development- Road Construction/Reconstruction
- L2 Multiresource Road Access Development- Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L4 Trail Construction/Reconstruction - Foot, Equestrian and Trailbikes
- L5 Trail Construction/Reconstruction - Equestrian
- L8 Transportation - Roads - Open
- L9 Transportation - Roads - Limited Use
- L10 Transportation - Roads - Closed
- L11 Transportation - Roads - Obliterated
- L12 Transportation - Trails - Open
- L13 Transportation - Trails - Limited Use

- P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

If a project proposal for winter sports/recreational resorts received, analyze it following the NEPA process, including public review and comment. In the meantime manage area to maintain its recreational attributes

Develop and Implement a management strategy for willow flycatcher.

Determine the potential and plan, if suitable, the introduction of Lahontan cutthroat trout in Perazzo Creek

Improve the health and vigor of the timber stands through both selective and regeneration harvest prescriptions. Size and shape of openings would be determined by other resource management objectives

Continue to evaluate and implement mitigation measures to reduce the risk of cumulative watershed effects.

VII. SPECIFIC MONITORING AND EVALUATION

If a winter sports facility is developed, monitor the impacts on the other resources.

Evaluate potential for introduction of Lahontan cutthroat trout in Perazzo Creek

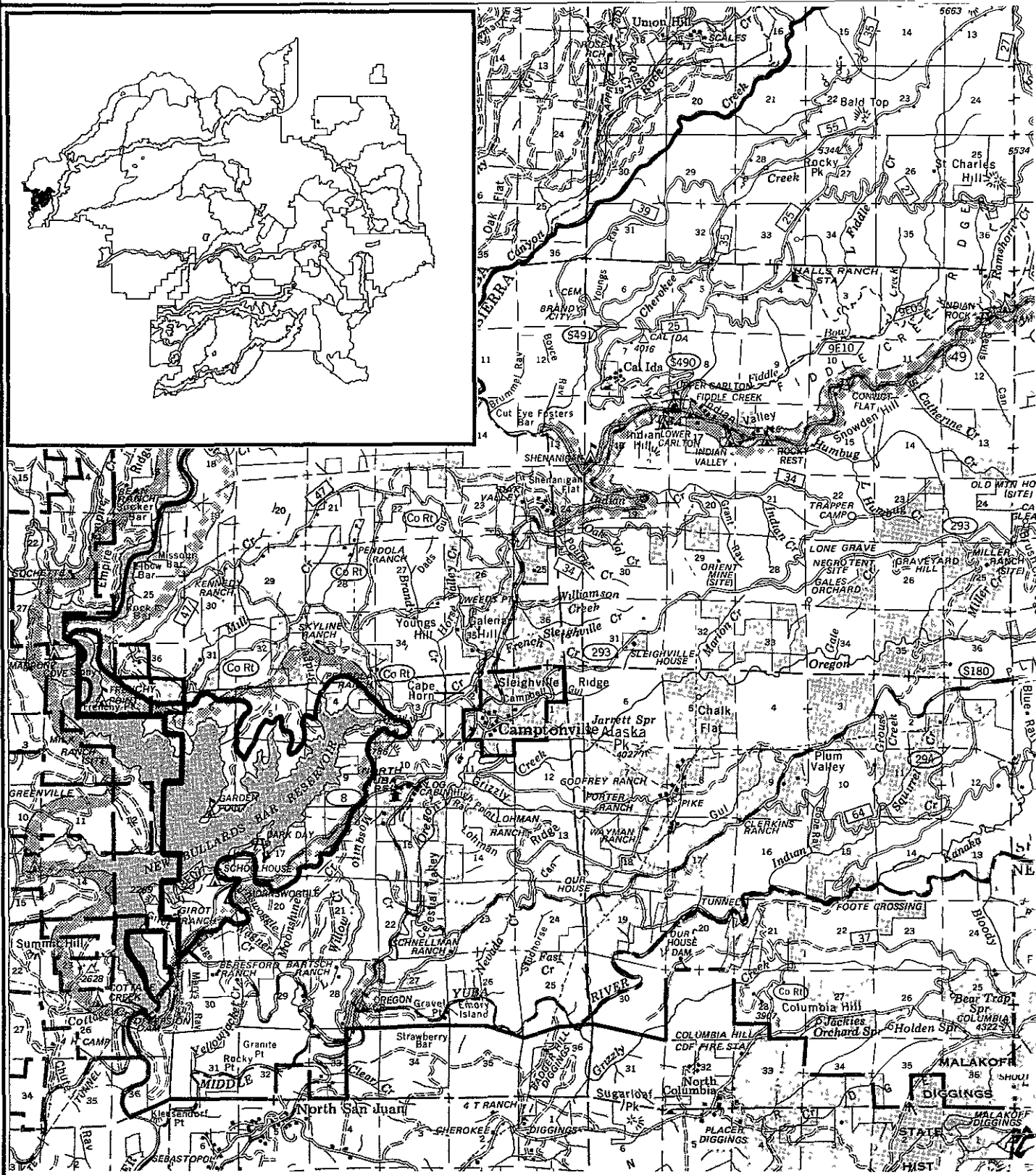
Monitor for cumulative watershed effects

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 034

BULLARDS

T18N, R8E



034 BULLARDS BAR

3,571 GROSS ACRES

2,645 NFS ACRES

I. DESCRIPTION

This management area (MA) lies in the extreme southwest corner of the Downieville District. It borders the Plumas National Forest on the west, Marysville Road on the south, and the Pendola management area on the east. Elevations range from 1,900 to 2,400 feet.

Completed in 1972, the 645-foot high New Bullards Bar Dam is the highest concrete arch on the West Coast. The Reservoir is 15 miles long, has a water surface area of 4,600 acres, a shoreline of 50 miles, and stores 930,000 acre-feet of water. The primary purposes of this facility are hydroelectric power production and municipal, irrigation and industrial water supply.

Vegetation within the area is mixed conifer and hardwoods. Wetland acreage is insignificant. There are 891 acres of unsuitable productive forest land.

The shoreline is very steep, with few areas flat enough for development of recreation facilities. The highly erosive decomposed granite soils along the shoreline show evidence of massive earth slips and continuous rilling.

Bald eagles use the reservoir area for winter habitat and nesting. Osprey presently nest along the reservoir.

Approximately one-third of the Downieville District recreation use and activity occurs within this area (300,000 Recreation Visitor Days or RVD's). Recreation facilities were constructed around the reservoir with Davis-Grunsky Act funding. Recreation management responsibilities are shared between the Tahoe and Plumas National Forests and the Yuba County Water Agency (YCWA). Coordinated recreation planning has been undertaken to meet Federal Energy Regulatory Commission (FERC) requirements for a recreation plan. Exceptional bass and kokanee salmon fishing and a variety of water sports makes this a popular recreation reservoir. Portions of the Pendola, Moonshine, and Challenge (Plumas NF) MA's can be viewed from the reservoir.

A portion of the Willow Creek Cattle Allotment is in this MA.

A portion of spotted owl habitat area B-2 lies within this MA.

The selected emphasis species are bald eagle, osprey, rainbow trout, Kokanee salmon, warm water fishes, and the wetlands group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The need to protect water quality of the reservoir is critical to meeting the overall objective of maintaining the reservoir's high water quality for municipal, industrial, and irrigation purposes. The steep erosive slopes around the reservoir shores are particularly susceptible to erosion and mass movement.

Lack of sanitation along the shoreline, steep slopes, and extreme fire danger above the high water mark have resulted in restricting camping to designated camping areas only.

A concessionaire-operated recreation complex including both National Forests as well as YCWA facilities may be the best way to manage the recreation sites. Operation of only a portion of the total complex does not appear to be economically feasible.

There is considerable unauthorized use associated with dredging for gold on the North Yuba River at the upper end of the reservoir.

Because of the high recreation use and existing scenic character of the reservoir, retaining the predominantly natural landscape is a concern.

Bald eagle habitat around the reservoir should be protected because they roost around the reservoir in the winter. Bald eagle nesting has occurred around the reservoir.

111. RESOURCE MANAGEMENT EMPHASIS

Emphasize maintenance and improvement of recreation sites around the reservoir with day-use dispersed recreation in the outlying areas

Regulate timber management through the use of special cutting practices

Emphasize soil and water quality management throughout the area. Retain the natural landscape along the reservoir shoreline

Improve habitat for bald eagles and osprey. Emphasize maintaining roosting and nesting habitat for bald eagles within 200 yards of the high water line around the reservoir

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural in developed sites, rarer natural in all other areas
- B Visual Quality Objective - Retention in foreground, as viewed from Bullards Bar Reservoir and the recreation sites. Partial retention for remainder of the area, including developed sites.
- C Transportation Management Policy - All roads open. Forestwide Standards and Guidelines apply
- D Mf-Highway Vehicle Restrictions - Designated routes only
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C3 Lake Fisheries - Nonstructural Improvement and Maintenance
- C4 Lake Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement. Structural (Permanent and Transitory)

- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasable
- G4 Minerals Management - Leasable Withdrawals

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development • Road Construction/Reconstruction
- L2 Multiresource Road Access Development. Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L6 Trail Construction/Reconstruction - Special Requirements
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection • Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Meet water quality objectives using special cutting practices and best management practices

Continue to restrict camping to developed sites and designated camping areas

Work with YCWA to develop a viable concessionaire-operated recreation complex, as well as a strategy for management of the camping and mining activity on the North Yuba River

Develop a spotted owl management plan for SOHA B-2

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitor soil movement on erosive slopes

Monitor bald eagle use of management area during winter and summer months

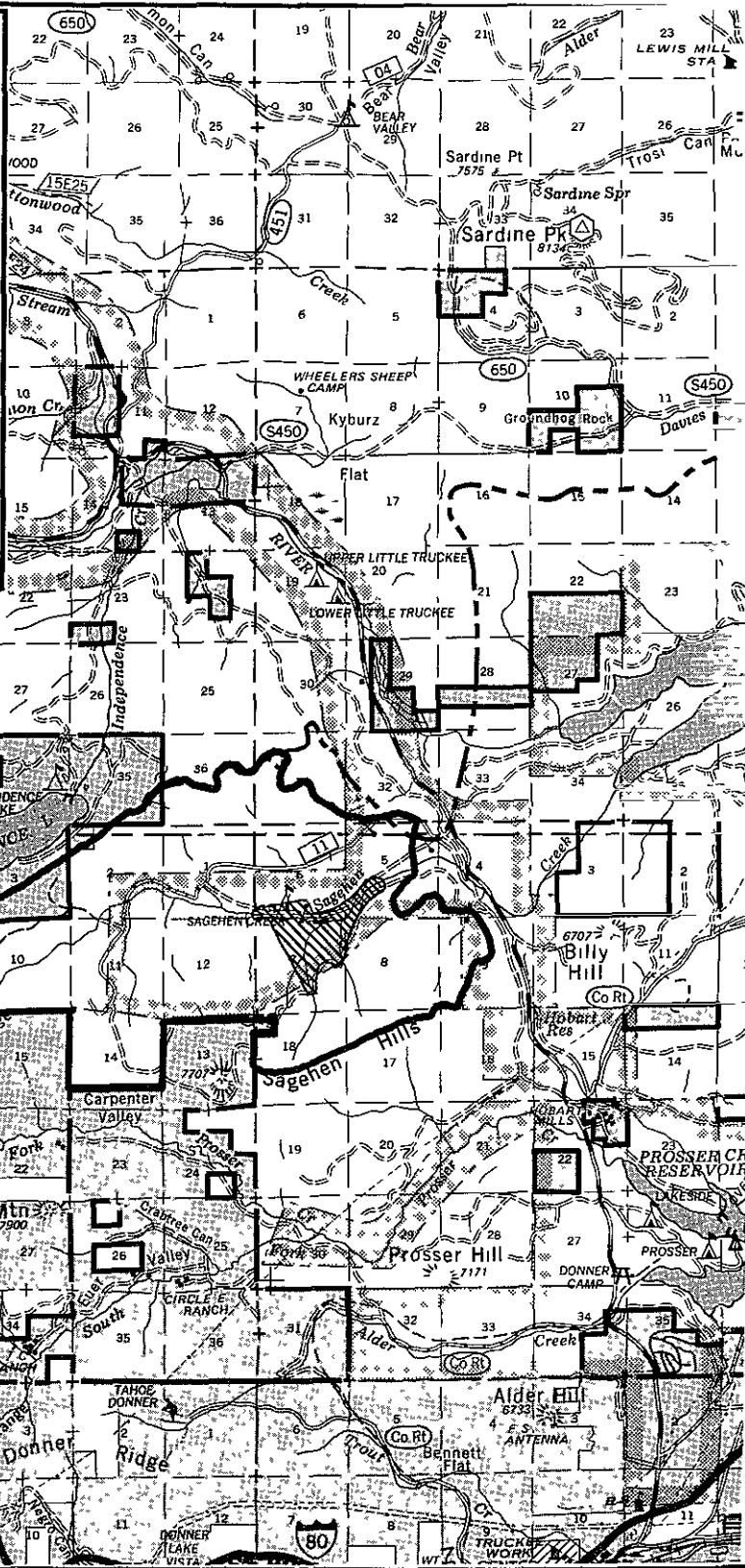
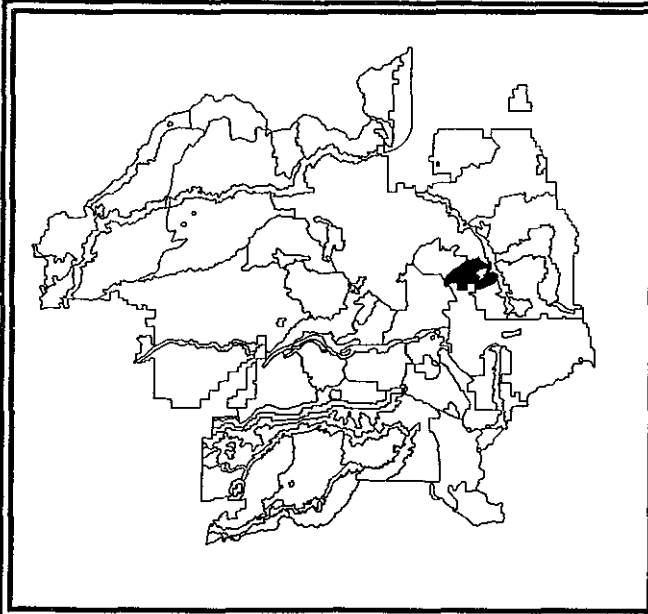
- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA NO. 35 WAS NOT USED

MANAGEMENT AREA 036

SAGEHEN BASIN

T18N, R15E



036 SAGEHEN BASIN

6,975 GROSS ACRES

6,818 NFS ACRES

I. DESCRIPTION

This management area (MA) is bounded by the Truckee-Sierraville Ranger District boundary on the north, Highway 69 on the east, Carpenter Ridge on the west, and the Sagehen Hills on the east. Elevations range from 6,100 feet to 8,700 feet. Railroad logging, grazing, and fur trapping have occurred throughout historic times. The Donner and Carpenter Ridge fires occurred during the 1960's and are being reforested. Recent National Forest timber activity has included the Independence, Sagehen, and Golden Timber Sales and several small salvage sales.

Vegetation is mostly mixed conifer with true fir at the higher elevations. Scattered fields of shrubs and plantations occur in the burned-over areas. The drainages are composed of wet meadows with lodgepole stringers. There are 170 acres of wetlands. There are 26 acres of unsuitable productive forest land. This area lies within the Sagehen Watershed. The Sagehen Range Allotment occurs within the unit. Management Area 043, Sagehen Station, lies inside this MA, most of which is under special-use permit to the University of California, Berkeley (UCB). One small campground is located along Sagehen Creek. There is a long-term study under special-use permit to the University to study the effects of the Donner Burn. The Sierra County Road to Independence Lake skirts the northern end of the area. The Sagehen bypass road is a cooperative Forest collector road that provides the major access for the area.

This MA contains the 79 acre Sagehen Headwaters Special Interest Area (SIA).

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The University of California, Berkeley, has shown interest in expanding their research in the entire Sagehen Basin to include validation of the California Wildlife Habitat Relationships database system. This could conflict with public use and resource commodity outputs associated with multiple use management. Increased OHV use may conflict with research projects.

This MA contains an area identified by U C Berkeley as a potential Special Interest Area (Sagehen Headwaters).

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 69. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

The opportunity exists to continue rehabilitation of the burned areas through coordinated timber management and visual quality management. Both scenic and watershed damage can be improved by special cutting and revegetation efforts.

Dispersed camping within the Basin conflicts with research efforts, therefore, camping is restricted in the southeast 1/4 of Section 2, east half of Section 11, Section 12, portions of Section 7, south half of Section 1, south half of Section 6, and in Section 5. In the above areas, camping is allowed only in the one developed campground.

There is an opportunity to reduce monotypical stands and to increase vegetation diversity for wildlife, aesthetics, wildfire protection, insect protection, and other silvicultural objectives.

There is an opportunity to manage this area more intensively for wildlife by protecting and improving habitat in the key fawning areas.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to provide two alternative types of stand structure typified by even-age openings and stands managed to produce and maintain mature forest structure. This will allow the evaluation of the relationships between stand structure, timber yields, wildlife habitat and other resource values.

The even-age structure will be developed by conventional intensive management including clearcutting and planting. The uneven-age stands will be developed by identifying wildlife stand management objectives and feature older aged trees (up to 300 years). They will have their structures controlled through partial cutting. All timber sales in both stand types will be marketable and timber harvests managed to attain full regulation. Coordinate resource management in the Highway 69 middle ground to maintain the natural scenic quality. Sacrifice some short-term visual quality objectives to enhance long-term visual objectives. Timber harvest is regulated and features long rotation, even-aged timber consisting of various age classes from 0 to 150 years. Reforest old burns and maintain them to optimize timber growth.

Manage the vegetation using techniques to rehabilitate or enhance the potential character where the vegetation has been damaged by fire or biological forces. Convert wildfire-related brushfields and understocked plantations to fully stocked timber stands, particularly on the Donner Burn.

Use vegetative diversity and forest stand structure to protect wildlife habitat. Allow validation of the California Wildlife Habitat Relationships database. Continue range forage use in nonriparian open areas. Continue to provide primitive overnight camping experiences at Sagehen Creek Campground. Additional facilities, including marked trails, may be provided for snowmobile use and off-track Nordic skiing as appropriate. Prohibit commercial or competitive event OHV activities within this management area.

Identify the boundaries for the Sagehen Headwaters SIA and include in the SIA Implementation Plan.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rooded natural
- B Visual Quality Objectives - Retention for Sagehen Headwaters SIA; partial retention for areas viewed from Highway 89 north, enhancement within the old burns, modification in remainder of management area
- C Transpotation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions. Designated routes only, summer. Suggested routes winter (Open).
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management. Public Sector
- A11 Recreation or IS Site Construction or Rehabilitation
- A15 Special Interest Area Investigation and Management

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven-Age Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F3 Flow Timing improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables

- 04 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road **Construction/Reconstruction**
- L2 Muniresource Road Access Development. Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestnan Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L7 FA80 Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The area is well suited for timber and resource management and research on the effects of forest management on wildlife. The area has a well developed transportation system. Continue to coordinate management of this area pursuant to the Protocols between the University of California, Berkeley and the Tahoe National Forest. These Protocols allow for continued research coordinated with intense forest management.

Reduce potential adverse impacts from current OHV use and from future increases in OHV use by implementing a more controlled OHV program, as presented in the Sagehen OHV Project., (Decision Notice/FONSI, 5/08/86)

The partial retention and enhancement VQO's assure the natural character of the Highway 89 scenic corridor is maintained.

Sacrifices of some short-term visual quality objectives will be made to enhance long-term visual quality, as burn scars are rehabilitated.

Continue camping restrictions along Sagehen Creek to the one developed site.

Increase vegetation diversity through regeneration and intermediate harvesting, fuelbreak construction, and other stand management activities including planting of other locally adapted species.

After field evaluation is completed, map the boundaries of the Sagehen Headwaters Special Interest Area (SIA) and include in the SIA Implementation Plan.

VII. SPECIFIC MONITORING AND EVALUATION

Coordinate special-use research and National Forest System activities on an annual basis.

Monitor willow flycatchers to determine population trends.

Monitor OHV and other dispersed recreation use to further evaluate potential conflicts with research.

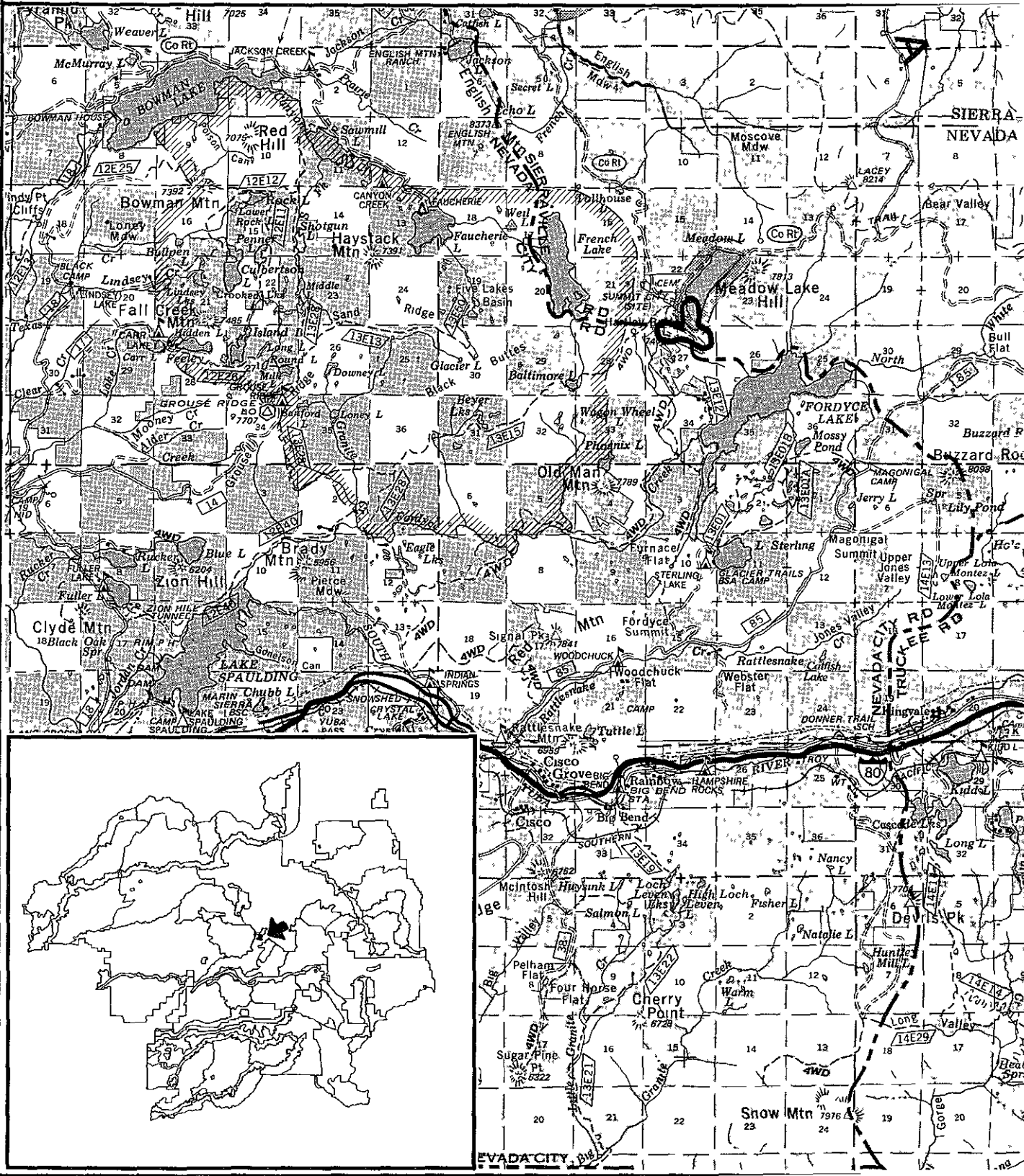
Monitor health and vigor of plantations and effectiveness of treatments aimed at increasing vegetation diversity.

1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
 2/ Refer to Appendix C, Appendix D, Appendix E, Appendix F, Appendix G, Appendix H, Appendix I, Appendix J, Appendix K, Appendix L, Appendix M, Appendix N, Appendix O, Appendix P, Appendix Q, Appendix R, Appendix S, Appendix T, Appendix U, Appendix V, Appendix W, Appendix X, Appendix Y, Appendix Z, Appendix AA, Appendix AB, Appendix AC, Appendix AD, Appendix AE, Appendix AF, Appendix AG, Appendix AH, Appendix AI, Appendix AJ, Appendix AK, Appendix AL, Appendix AM, Appendix AN, Appendix AO, Appendix AP, Appendix AQ, Appendix AR, Appendix AS, Appendix AT, Appendix AU, Appendix AV, Appendix AW, Appendix AX, Appendix AY, Appendix AZ, Appendix BA, Appendix BB, Appendix BC, Appendix BD, Appendix BE, Appendix BF, Appendix BG, Appendix BH, Appendix BI, Appendix BJ, Appendix BK, Appendix BL, Appendix BM, Appendix BN, Appendix BO, Appendix BP, Appendix BQ, Appendix BR, Appendix BS, Appendix BT, Appendix BU, Appendix BV, Appendix BW, Appendix BX, Appendix BY, Appendix BZ, Appendix CA, Appendix 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MANAGEMENT AREA 037

MEADOW LAKE

T18N, R13E



037 MEADOW LAKE

58 GROSS ACRES

58 NFS ACRES

I. DESCRIPTION

This management area (MA) is located adjacent to Meadow Lake near the center of the Tahoe National Forest. It includes the former townsite of Summit City. When gold was discovered in 1863, the city grew overnight. Because of the inability to extract gold from the ore, the town died within 2 years.

This MA is classified as the Meadow Lake Cultural Area.

The MA includes Meadow Lake Reservoir Dam, constructed in the 19th century for mining purposes. The dam is owned and maintained by Pacific Gas and Electric Company. There is evidence of extensive prehistoric use in the form of petroglyphs and other cultural resource sites.

There is a road into the MA and a moderate level of recreation use. This road also provides the primary access to the patented mining claims located south of the reservoir.

There are no selected emphasis species for wildlife and fish. Wetlands acreage is minor. There are 49 acres of unsuitable productive forest land.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

A management concern is to inventory and protect Special Interest Areas containing geologic, ecologic, or cultural features. The Meadow Lake area has previously been identified as having historic and prehistoric cultural values. No previous cultural areas have been classified on the Tahoe National Forest. The Meadow Lake area appears to be qualified for designation as a cultural area under 36 CFR 294.1.

III. RESOURCE MANAGEMENT EMPHASIS

Manage this MA to protect the cultural qualities. Through procedures outlined in FSM 2361 and pursuant to 36 CFR 294.1 (a), the MA will be studied to determine the exact boundary location and included in an Implementation Plan. Any portion of this MA not included for protection will be managed as part of MA 045 (Meadow Lake). The MA is unsuitable for timber production.

Discourage overnight recreation use.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Semi-primitive motorized,
- B. Visual Quality Objective - Retention.
- C. Transportation Management Policy - Roads restricted for protection of cultural resources.
- D. Off-Highway Vehicle Restrictions - Designated routes only.
- E. Forestwide Standards and Guidelines - All apply except 25, 26, and 31.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- A15 Special Interest Area Investigations and Management

- G2 Minerals Management- Locatable Withdrawals
- G4 Minerals Management- Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L13 Transportation Management, Trails. Restricted Use

- P5 Fire Protection -Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

This MA has been classified as a Cultural Area pursuant to Title 36 CFR 294.1(a) and the authority vested in the Regional Forester by the Chief, Forest Service. After field evaluation is made, map the boundaries of the Meadow Lake Cultural Area and include in the Implementation Plan for the cultural area. Portions of the MA not designated as cultural area will be allocated to MA 045 (Meadow Lake).

Protect and preserve the cultural features of this MA. Plan appropriate visitor interpretive services. Research and study of the area on a cooperative basis with universities.

VII. SPECIFIC MONITORING AND EVALUATION

Forest Service and research Institutions may monitor for research purposes.

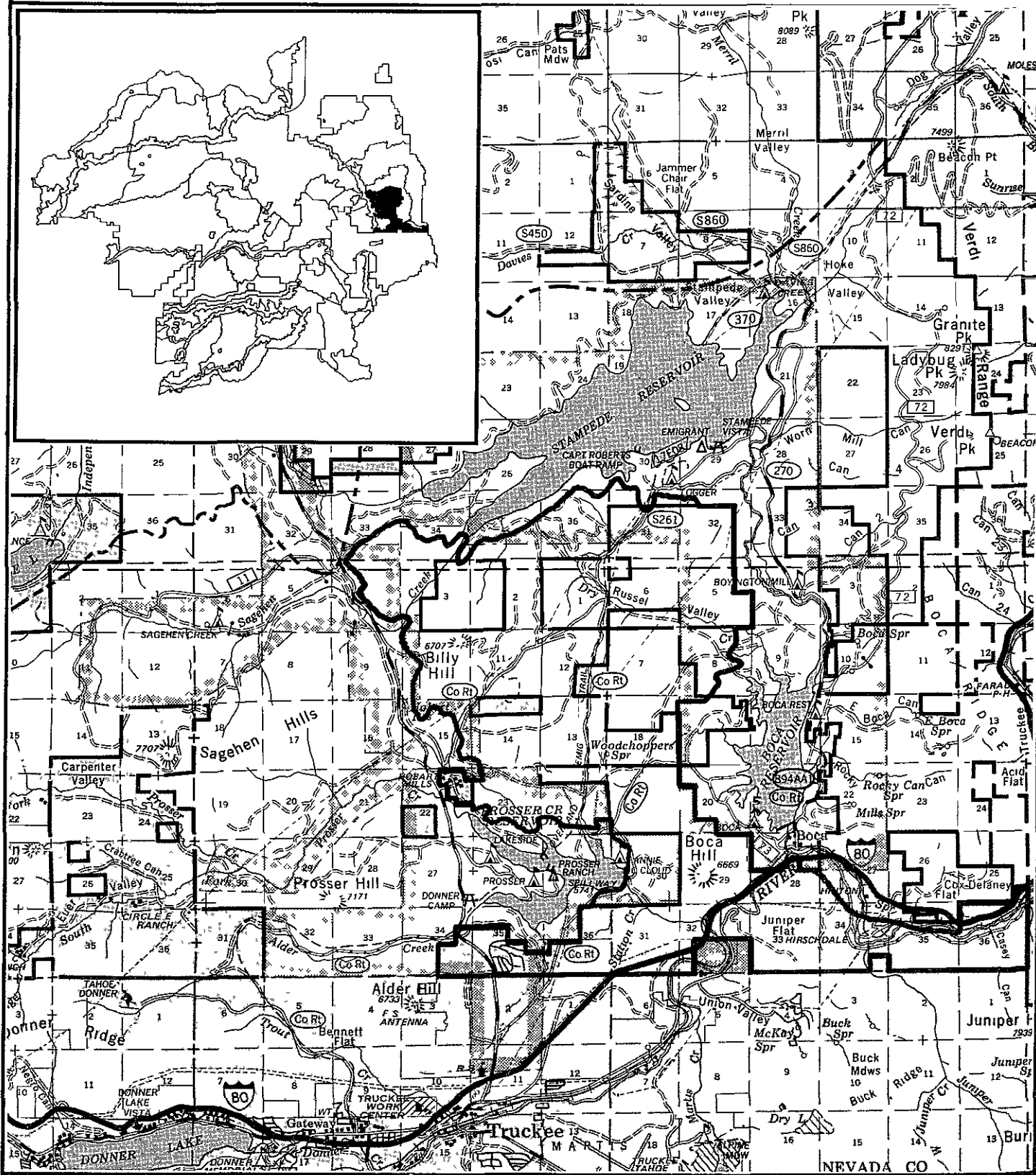
Monitor recreation use to evaluate disturbance to the area.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 038

BILLY

T18N, R16E



038 BILLY

13,229 GROSS ACRES

13,229 NFS ACRES

I. DESCRIPTION

This management area (MA) is bounded on the north by Stampede Reservoir and on the south by the Forest boundary near Prosser Creek Reservoir and Interstate 80. The western boundary is the Highway 89 corridor and the eastern boundary is Boca Reservoir. Elevations range from 5,500 to 6,700 feet. The topography is mostly gentle but is dominated by Billy and Boca Hills. Historic use from the 1840's includes the Overland Emigrant Trail, grazing, and railroad logging. Hobart Mills was the railroad logging center for the Truckee basin. A portion of this management area was burned in 1960 by the Donner Burn, and in 1977 by the Freeway Fire. This area has a high incidence of wildfire. Timber harvest has occurred on both private and National Forest System lands in the late 1970's and early 1980's.

The area is predominately eastside pine with open sage-bitterbrush flats, and grassy meadows. Both the acres of sparsely stocked eastside pine stands and the reforestation areas need to be evaluated for site potential to produce wood and forage outputs. There are 0 acres of unsuitable productive forest land. There are 852 acres of wetlands. Some springs occur and several are developed at this time. Sagehen Creek is the only perennial stream within this area. The area is served principally by unimproved Forest Service and county roads. Numerous wheel tracks and low standard roads exist within the area.

The Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area.

Special uses include power transmission lines, a petroleum pipeline, and telephone lines. A seismic sensor is under permit in Section 12 southwest of Russel Valley. This MA contains a portion of the Boca and Bickford Range Allotments. A private recreation development (Timber Trails) lies near the center of the area. Single family residences are being developed on private land in Russell Valley, in Prosser Lake View Estates, and the southeast quarter of Section 12, T 18N., R 16E. Recreation use consists of dog-sledding, snowmobiling, cross country skiing, hiking, fishing, hunting, and sight-seeing. The Forest Service acquired some of the private land within the management area from the Hopkins Realty Trust in the early 1980's. These acquired lands brought with them a significant volume of reforestation needs and fuels backlogs.

This MA provides summer range for the Loyalton-Truckee Deer Herd. Wet meadows, riparian areas, and brushfields are interspersed throughout the area and are important fawning habitat. A major migration corridor traverses from Boca Hill to Prosser Hill (MA 46), another from the north side of Boca Reservoir to the east side of Prosser Reservoir, another from the west end of Stampede Reservoir to the north end of Prosser Reservoir, and another in the Sagehen Creek drainage. Bald eagles and osprey have been seen, but there are no known nesting sites in this MA. This MA also contains habitat suitable for willow flycatchers.

The Prosser Pits are a local landmark and are a result of the excavation for the construction of Prosser Dam. It is located south of Prosser Reservoir. The area is popular with off-highway enthusiasts. Their use has created conflicts with adjacent homeowners. A portion of the Pits is owned by the State of California (State Lands Commission).

Selected emphasis species are deer, willow flycatcher, rainbow trout, and the riparian group. This area contains key deer fawning habitat.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Because of the flat terrain and open nature of the area, fishermen, fuelwood cutters, hunters, and recreationists with other interests generate a great deal of motorized travel both on and off-highway. A large volume of roads and unclassified wheel tracks have resulted from this travel. A high rate of resource damage has occurred, primarily in early winter and spring. Impacts to wet meadows and rutting of roads commonly occur. If uncontrolled, resource damage is likely to continue.

There are concerns to protect key fawning habitat and willow flycatcher habitat. There are range and wildlife habitat improvement opportunities in the sage-bitterbrush flak, grassy meadows, and at undeveloped spring sites. There are opportunities to improve fawning and willow flycatcher habitat.

There is a concern as to how those acres that are considered permanent range in the range allotment management process, which are also considered part of the reforestation needs should be treated.

Dispersed camping west of Prosser Reservoir (Section 30, T 18N., R. 17E.) has caused resource damage, resulting in restricting camping in Section 30 and in areas near Boca and Stampede Reservoirs to developed sites and designated camping areas only. New developed recreation facilities may be needed within this management area as the capacities of adjacent facilities are exceeded by growing demand.

There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation management activities

Another concern is the potential for large, damaging wildfires due to a combination of fire weather, high use, and fast-burning fuels.

There is a concern as to the economically optimum mix of wood and forage production in sparsely stocked eastside pine stands (less than 20 percent crown closure)

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen from Highway 89, Interstate 80, major travel-ways within the area, and the reservoirs. State Highway 89 and Interstate 80 are included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus require special consideration to preserve the character of their scenic backdrops

There are opportunities to expand the public fuelwood program through intensive forest management by thinning over-stocked stands

Some residents living adjacent to National Forest System Lands within this MA have expressed concern that Forest Service management activities would alter their "green belt" that served as parks, visual screen, and open recreation areas for their neighborhood

The opportunity exists to continue rehabilitation of the burned areas through coordinated timber management and visual quality practices. Both scenic and watershed damage can be improved by special cutting and revegetation efforts

There is an opportunity to reduce uniform stands and to increase vegetation diversity for wildlife, aesthetics, wildfire protection, insect protection, and other silvicultural reasons

An opportunity exists to cooperate with the State of California in developing, enhancing, and managing the area known as "the Pits" as a special 'open' area. The adjacent landowners, based on comments about existing use, can be expected to be concerned about noise, litter, and trespass associated with such a development

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphases are visual quality, forage, and timber production. Stress the visual quality along the main county roads in the Highway 89 middle ground and foreground. Practice range use and improvement mostly in the open sagebrush-bitterbrush and grassy areas

The major resource management emphasis is regulated even-aged timber production on suitable timber sites, and forage production on permanent and transitory range. Intensively manage sparsely stocked eastside pine stands for forage production to increase the range carrying capacity, and evaluate them for the optimum mix of wood and forage outputs. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing recreation development sites and special-use permit areas.

Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include of this trail into the National Historic Trail System

Emphasize wildlife and watershed values in streamside management zones and where threatened and endangered species' habitats occur. Retain and improve, where possible, the willow flycatcher habitat. Also protect and improve key fawning habitat for deer and maintain the integrity of their migration routes

The desired future condition for lands managed for timber is plantations through medium-size sawlog stands in the eastside type. Manage plantations for rotation ages of 80 to 150 years. Potential recreation sites will be treated to enhance their long-term suitability for occupancy. The remaining lands within the management area will be similar to their present condition

Manage the vegetation using techniques to rehabilitate or enhance the potential character where the vegetation has been damaged by fire or biological forces. Convert wildfire related brushfields and understocked plantations to fully stocked timber stands, particularly on the Freeway and Donner Burns

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity **Spectrum** - Roaded natural and rural
- B Visual Quality Objective - Partial retention for the foreground and middleground as seen from Highway 89, Interstate 80, the reservoirs, and other major public travelways. Partial retention for the foreground from subdivisions. Enhancement *within* historic burns and *modification* for the remainder of the area.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Designated routes only in summer. Open for *over-the-snow* in winter.
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- AS Restricted OHV
- A8 Developed Recreation & Interpretive **Service Sites** Management. Public Sector
- A9 Recreation Management - Private and Other Public Sector
- A11 Recreation or IS Site Construction or Rehabilitation

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2** Stream Fisheries - Structural Improvement and Maintenance
- C5** Early Succession Vegetation Management
- C6** Midsuccession Vegetation Management
- C8** Structural Habitat Improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D4** Range Management - Transitory Range Type (Intensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8** Range Improvement - Structural (Permanent and Transitory)
- D9** Range/Scattered Eastside Pine Evaluation

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven Aged Management
- E9 Special Cutting - Urban/Rural/Wildland Interface
- E10** Artificial Stand Reestablishment
- E11** Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1** **Water Resource** Improvement
- F2 **Water Yield** Improvement
- F3 **Fluvial** Improvement
- F4 **Sediment** Improvement

- G1** **Mineral Management - Locatable**
- G2** Minerals Management - **Locatable Withdrawals**
- G3 Minerals Management - **Leasable**
- G4 **Minerals Management - Leasable Withdrawals**

- J2 **Stand and Adjustments - Limits**

- L1 Timber Access Road Development- Road Construction/Reconstruction
- L2 Muhresource Road Access Development- Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction- Foot Traffic Only
- L4 Trail Construction/Reconstruction- Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails. Open
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection- Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Develop and implement a road and wheel track management plan through cooperation with the California Department of Parks and Recreation's *OHV* program. Obliterate, stabilize, and revegetate surplus roads and wheel tracks that are not needed for administrative or public uses. Continue to stress resource protection through prevention, law enforcement, and public education. Restrict summer motorued travel to designated routes only.

Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in "The Overland Emigrant Trail Through The Tahoe National Forest" until more refined evidence is disclosed.

Identify and retain all willow flycatcher habitat.

Improve range and wildlife habitat through timber sales, range betterment funds, etc. as funds are available.

Continue management of the 'Prosser Pits' as an open *OHV* area. Work with adjacent landowners, local law enforcement agencies, and the California State Lands Commission to minimize both on-site and off-site effects.

It is the responsibility of developers, in consultation with county planning agencies, to provide for 'greenbelts' and parks for communities. It is not a Forest Service responsibility to provide subdivision amenities. However, the Forest Service will continue to analyze the effects of off-site impacts on adjacent lands during project-level planning.

Identify, protect, and/or improve key deer fawning sites where possible.

Continue to restrict camping in Section 30 and in areas near Boca and Stampede Reservoirs to developed sites and designated camping areas only as needed. Emphasize vegetative treatments of potential recreation sites to enhance their long-term potential as recreation sites.

Emphasize forage production on the sparsely stocked eastside pine stands. Evaluate the sparsely stocked eastside pine stand acres and the reforestation needs acres to identify their site potential to produce wood and forage outputs.

Continue to prepare and administer fuelwood sales where direct benefits for timber stand improvement, slash reduction, and wildlife exist. Along the Stampede Valley, Boca, and East Pasture county roads, use intensive slash disposal to maintain a pleasing visual experience.

Treat fuels to maintain a fuels complex which will aid suppression actions to meet management (burned area) objectives.

Sacrifices of some short-term visual objectives will be made to enhance long-term visual quality as burn scars are rehabilitated.

Increase vegetation diversity through regeneration and intermediate harvesting, fuelbreak construction, and other stand management activities, including planting of other locally adapted species.

The partial retention VQO established for the visually sensitive areas assures that management activities will remain subordinate to the natural landscape character.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitor willow ~~flycatchers~~ to ~~determine~~ population trends

Monitor and ~~evaluate~~ the ~~site potential~~ of sparsely stocked eastside pine stands and the ~~reforestation~~ needs acres ~~io~~ produce wood and forage ~~outputs~~.

Monitor OHV use to determine impacts.

Monttor county zoning and land use ~~regulations~~ for coordination of county and *Forest* land management ~~objectives~~.

Monitor ~~health~~ and vigor of larger plantabons and ~~effectiveness~~ of treatments aimed at Increasingvegetation ~~diversity~~

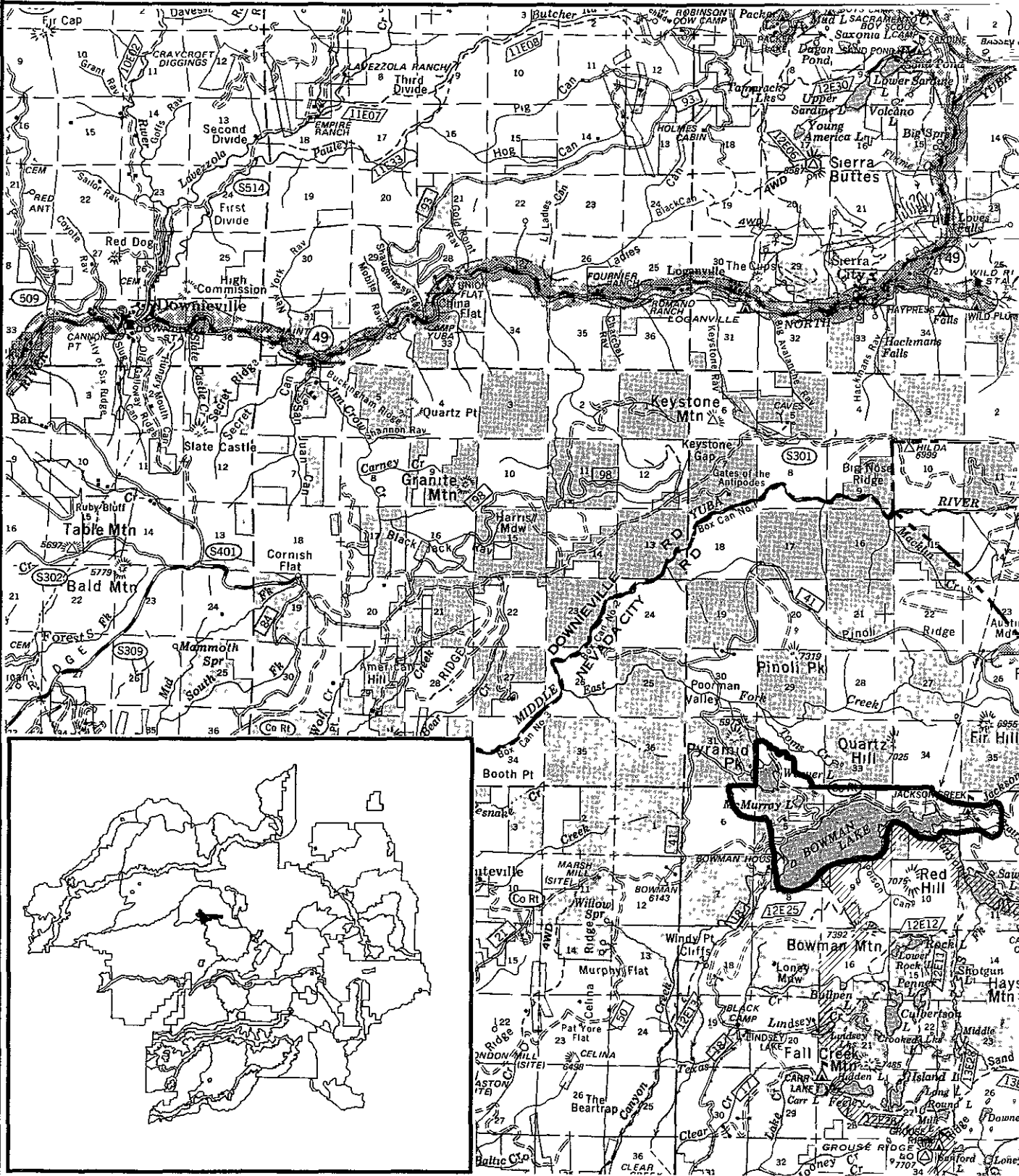
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete ~~Descriptions~~ of Management Practices in Chapter V.

MANAGEMENT AREA 039

BOWMAN

T18N, R12E



039 BOWMAN

2,129 GROSS ACRES

626 NFS ACRES

I. DESCRIPTION

This management area (MA) contains Bowman, Weaver, and McMurray Lakes as well as the surrounding lands. Prairie Creek and Jackson Creek summer recreation residence tracts, a special-use campsite at Weaver Lake, and developed campgrounds at Bowman Lake and Jackson Creek are also included within the MA. An important landowner is Nevada Irrigation District (NID), which manages the area for water production, power-generation, and recreation purposes. Elevations range from 5,565 at Bowman Lake to 6,500 feet on the ridge to the north of the lake. Vegetation consists of brushfields, true fir, Jeffrey and lodgepole pine, and meadow areas. Timber within this area consists of scattered stands, primarily of true firs. There are 52 acres of wetlands in this MA. There are 34 acres of unsuitable productive forest land.

The eastern part of this area is within the English Grazing Allotment, administered by the Sierraville Ranger District.

Access to the area is by three low-standard roads. The Bowman Road (FS #18) is maintained by the Forest Service and provides access from Highway 20. Another Forest Service road, the Gaston Road (FS #21), provides access through Washington from Highway 20. A Nevada County road through Graniteville provides access from Highway 49 to the west, and from Jackson Meadows and Highway 69 to the east. Recreational use of the area is centered around Bowman and Weaver Lakes, both excellent trout fisheries. Limited developed facilities and low-standard roads limit recreation use.

A 60 KV power transmission line (Haypress-Bowman Hydro Electric Power Project) enters the MA east of the McMurray Lake and runs southwest (mostly on private lands) to the Bowman Lake dam site. A second 60 KV powerline (East Fork Creek Hydro Electric Power Project) is proposed to enter the MA west of Weaver Lake and run south (mostly on private lands) to the dam site.

The selected emphasis species are rainbow and brown trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Maintenance of the low-standard access roads to retain the relatively primitive recreational experience is valued by many users of the area. Because of limited developed facilities, improved access would have an adverse effect upon the existing facilities and the quality of the recreational experience. Cooperate with Nevada County and NID to resolve access and other vehicle problems.

There is a need for better sanitary facilities at Bowman Lake, any solution must involve coordination with NID.

The visual quality is a concern in this area.

Off-highway vehicle (OHV) use has increased in recent years. OHV users frequently travel cross-country instead of using designated routes, causing site disturbance.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphases are water-oriented recreation, developed recreation, and retention of a predominantly natural landscape. In order to maintain the primitive, remote-area experience, roads will not be paved unless necessary to prevent resource damage. This action limits the number of users of this management area so that use levels remain relatively low. Regulate timber management through special cutting practices.

The future desired vegetative cover is a mixture of timber and shrubs of different types and age classes. Large trees will be maintained, especially near roads and reservoirs, for visual quality. Manage timber within developed recreation sites to provide healthy stands of large trees as well as vigorous younger trees for screening and replacement of larger trees in the future.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive motorized
- B Visual Quality Objective - Retention for foreground as viewed from Bowman reservoir, Weaver Lake, and Graniteville Road. Partial retention within the developed sites. The sites will, however, meet the retention VQO when viewed as middle ground from travel routes. Partial retention for the remainder of area
- C Transportation Management Policy - Forestwide Standards and Guidelines apply. If new timber access roads are developed, they will be closed after use to reduce maintenance costs
- D Off-Highway Vehicle Restrictions - Designated routes only. Open to over-the-snow.
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordio Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- A17 Visual Resource Improvement

- C1 Stream Fisheries- Nonstructural Improvement and Maintenance
- C2 Stream Fisheries- Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasable
- G4 Minerals Management - Leasable Withdrawals

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multi-resource Road Access Development - Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Continue to work with Nevada Irrigation District to improve the sanitary facilities on their land at Bowman Lake. Do not upgrade Bowman road, but maintain it as necessary for the safety of the users and to prevent resource damage. Coordinate with Nevada County to manage vehicle access to Bowman Lake along the Graniteville Road. Correct damage from inappropriate OHV use. Manage to minimize future OHV use off designated routes. Coordinate with County and NID on OHV management.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

None

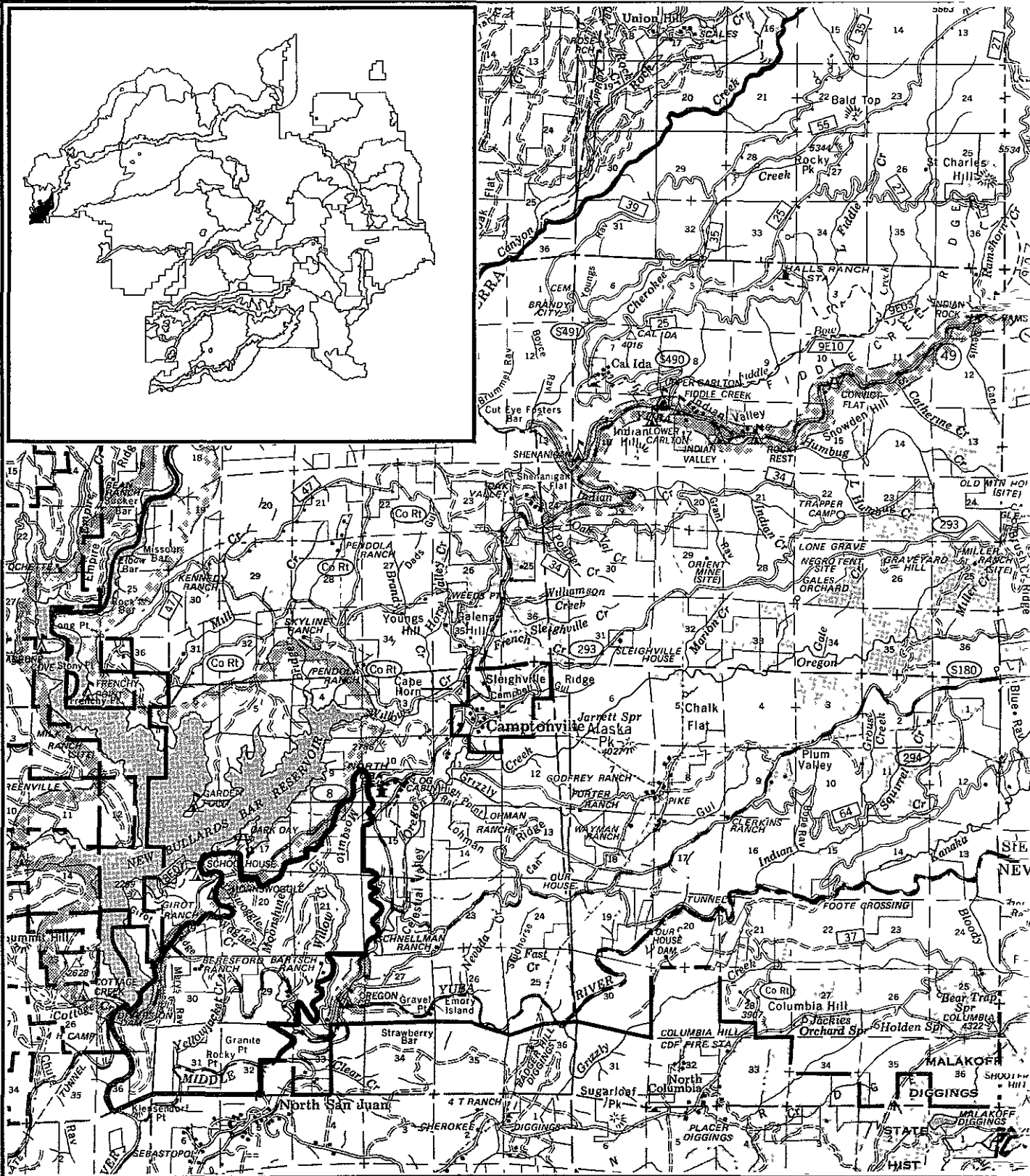
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 040

MOONSHINE

T18N, R8E



040 MOONSHINE

6,509 GROSS ACRES

4,012 NFS ACRES

I. DESCRIPTION

This management area (MA) is located west of Highway 49, north of the Middle Yuba River, and south of Bullards Bar Dam and Reservoir. Elevations range from 1,600 feet on the Middle Yuba River to 2,800 feet near Camptonville. The flat upland ridges characteristic to the area are high site timber producing lands, while the south exposures and slopes above the Middle Yuba River are of lower site quality and soils are highly erosive. Extensive hardwoods within the area are key to deer winter habitats. There are no wetlands in this MA. There are 464 acres of unsuitable productive forest land.

Approximately 1/3 of the land base is private with numerous small parcels from 5-40 acres in size. These parcels are used primarily as rural-residential homesites. The large component of private land represents residential, forestry and agricultural land uses. With the exception of the Yellowjacket Creek area above the Middle Yuba River, this management area is 90 percent accessed.

There is a Great Blue Heron rookery along Yellowjacket Creek. This rookery is located in a large ponderosa pine and contains approximately 20 nests.

A portion of spotted owl habitat area B-2 lies within this MA.

The selected emphasis species are deer, blue heron, rainbow trout, and the riparian and hardwood groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is a concern about the unsurveyed property lines and trespasses. The intermingled land pattern presents a number of rights-of-way problems. Including requests from landowners to access subdivided property.

Protection of the highly erosive granitic soils found throughout the management area is a concern.

There is a concern to protect and manage the Great Blue Heron rookery along Yellowjacket Creek. Vehicle use during critical wildlife cycles in the Moonshine Creek and Kleinsdorf Point Road areas, which are identified as key winter deer range, is a concern. There is a need to maintain key winter deer range. There is an opportunity to manage hardwoods within identified key deer winter ranges.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 49, Marysville Road, Moonshine Road, and the developed private land.

There is a conflict between residential use and intensive forest management.

There is a concern for fire protection of an area that is characterized by high fire incidence, hazardous fuel complexes, inadequate access, and a growing residential population.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intense even-age timber management. Emphasize wildlife and watershed values when managing streamside management zones, spotted owl habitat areas, and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuitable for timber production, such as existing recreation development sites, special-use permit areas, etc.

Emphasize opportunities to improve key deer winter ranges through hardwood management. Emphasize the management of the Great Blue Heron rookery in the Yellowjacket Creek area.

Emphasize timber and other resource management activities in the Highway 49 middle ground and Moonshine Road and Marysville Road foreground that blend with the surrounding landscape to assure natural features still predominate.

Emphasize the design of resource practices that enhance fire protection of forest resources and adjacent residential areas. Encourage development of local ordinances, fire prevention programs, and fire safe practices in private residential areas. Devise fuel management strategies to reduce the fire threat along the interface between wildland and residential zones.

The desired future condition for lands intensively managed for timber production is plantations through medium sawlog-size stands in the mixed conifer and hardwood-conifer forest types. These stands will be managed on a short rotation schedule of 120 years. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS & GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural
- B Visual Quality Objective - Partial retention for the middle ground of Highway 49 and foreground of Moonshine Road and the Marysville Road. Modification for the remainder of the area. Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have herein been assigned the Modification VQO.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply with emphasis on protecting roads in the highly erosive soils.
- D Off-Highway Vehicle Restrictions - Designated routes only.
- E Forestwide Standards & Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)
- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E9 Special Cutting - Urban/Rural/Wildland Interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning
- Ft Water Resource Improvement
- F4 Soils Resource Improvement
- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables
- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

- P1 Fire Protection- Continuous Fuels
- P3 Fire Protection- Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The highly erosive granitic soils require seasonal wet weather closures on several roads. All project planning will identify erosive soils areas and treatment and mitigation efforts will be prescribed accordingly.

Develop a fuel management plan that combines fuel breaks and reduction of activity fuels to reduce the threat of catastrophic fire. Coordinate fire protection activities with the California Department of Forestry and Fire Protection, the Camptonville Volunteer Fire Department, and local residents.

Protect the Great Blue Heron rookery. Identify a core nesting area with seasonal closures during critical periods. Maintain seasonal closure to Kleinsendorf Point. The main access to Moonshine Creek is a county road with large blocks of private land preventing Forest Service management for key winter deer range. National Forest System roads intersecting this county road in key winter deer range shall be seasonally closed.

The partial retention VQO assures that the Highway 49 middle ground and Moonshine Road foreground retain a predominantly natural condition.

Develop a spotted owl management plan for SOHA B-2.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

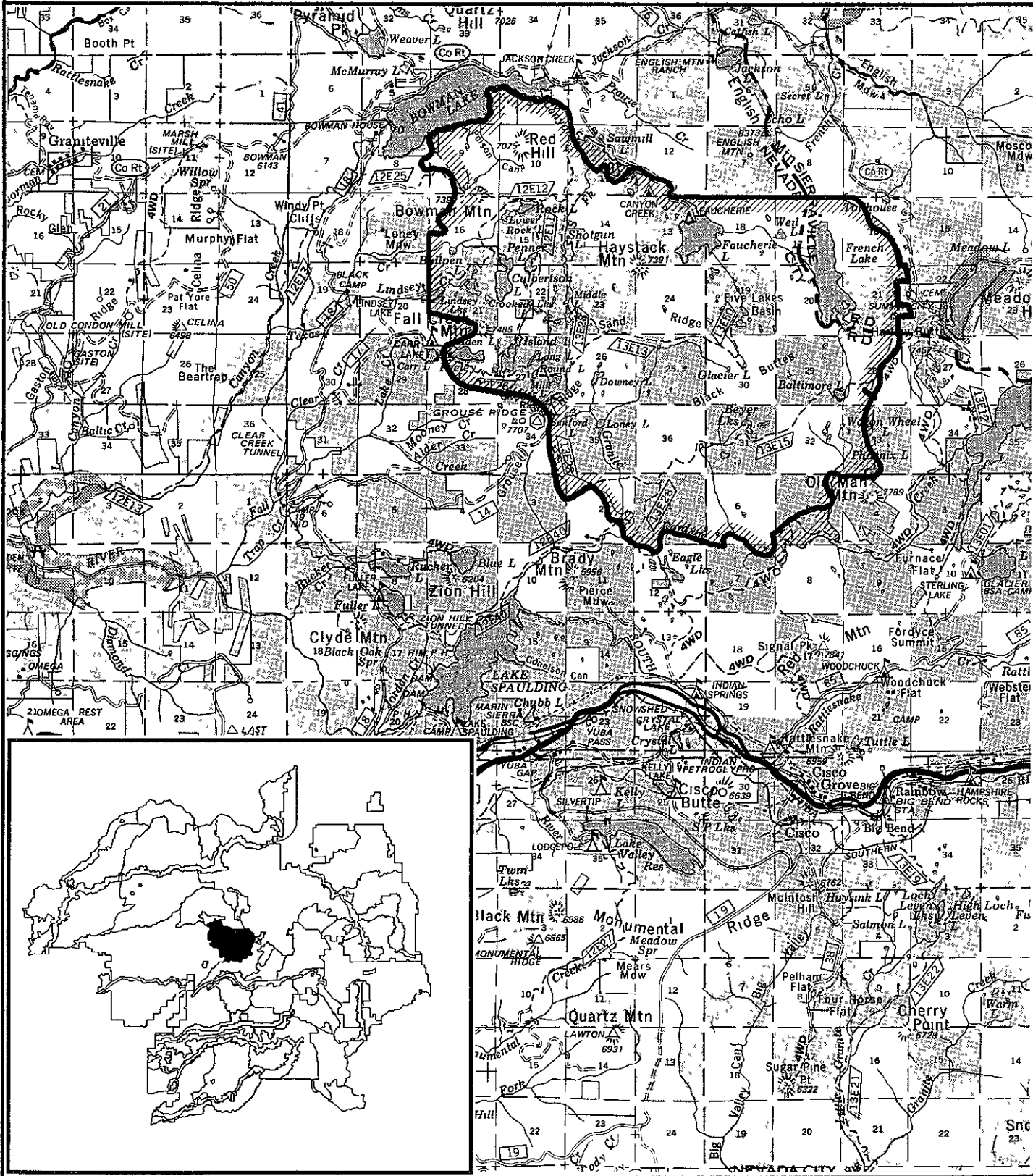
Develop a monitoring plan to evaluate success of the road management program as it relates to soil disturbance and erosion.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 041

GROUSE

T18N, R12E



041 GROUSE

19,641 GROSS ACRES 11,018 NFS ACRES

I. DESCRIPTION

This management area (MA) extends from Bowman Lake on the north to Fordyce Creek and Old Man Mountain on the south, from Grouse Ridge on the west to Meadow Lake on the east. Elevations range from 8,030 feet on the Black Buttes to 5,500 feet on Fordyce Creek. The area has been closed to general motor vehicle travel since 1972.

The high scenic quality of the area makes it unique. Massive areas of rock provide variety to the area, adding to the spectacular scenery. There are more than 125 lakes over 2 acres in size scattered throughout the area. The largest lakes are French and Faucherie Lakes in the northeastern portion of the MA.

Vegetation consists of scattered stands and stringers of conifer forest, wet meadows, alder and willow patches, and decadent brush. Conifer stands occur primarily where there are well drained soils two to five feet deep, while brush occurs on stony soils with low moisture-holding capacity. Poorly drained sites are associated with wet meadows and willow or alder thickets. There are 651 acres of wetlands. Large areas are bare or sparsely vegetated. There are 5,368 acres of unsuitable productive forest land.

Over one-half of the land within the area is privately owned. Major landowners are a large timber owner, Pacific Gas and Electric (PG&E), and Nevada Irrigation District (NID). An access road from Lindsey Lake to Rock Lake is used by PG&E, NID, and the private landowner at Culbertson Lake. The Grouse Lakes Campsite Plan prescribes land acquisition in some cases.

Over one-half of the area was accessed by low-standard roads prior to 1972, when the area was closed to motorized use to protect the soil and other resources. Motorized access is still permissible for administrative purposes and by private landowners within the MA during the summer, and by over-the-snow machines during the winter. The southeast boundary of this MA includes a portion of the Eagle Lakes-Fordyce Creek designated OHV route.

A well-developed trails system provides foot and horse access throughout the area. The area receives the heaviest nonmotorized recreation use on the Forest, by backpackers, day hikers, and fishermen. Most lakes have from five to ten primitive campsites which are used throughout the summer.

The area has been grazed by sheep or cattle since the gold rush era. Heavy grazing resulted in a declining condition of the meadows until the late 1960's when grazing use was reduced significantly. Since that time, condition and trend measurements show a continued improvement in the range resource. The MA contains portions of the Canyon Creek and English Cattle Allotments.

The eastern portion of the MA is mineralized and was the site of a small gold rush in 1865. It was short lived because the gold could not be economically separated from the ore. The town of Baltimore was located near Baltimore Lake, and Summit City near Meadow Lake. Remains of this gold rush and the associated mining activities can still be found.

The area provides excellent summer deer range and fawning areas. The selected indicator species are deer, rainbow and brook trout, and the riparian, wetlands, and meadow groups. About thirty of the lakes contain trout. Brown bullheads also inhabit many of these lakes. The California Department of Fish and Game stocks many of the lakes with fingerling trout; however, lakes with a high bullhead population are not stocked.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Use of the area during late summer and early fall by hikers, back-packers, and fishermen coincides with the grazing season. Cattle often congregate adjacent to lakes, the same areas to which recreationists are most attracted. Use of horses for travel within the area, either by grazing permittees or recreationists, is opposed by some recreationists.

There are agreements between major landowners for public nonmotorized use of the area. Motorized access to inholding by some landowners has resulted in continual criticism by recreationists. Some users wish to open the areas to OHV's, especially to interior lakes that were once accessed by them (pre-1972).

Many of the lakes are unsuitable for trout because of the populations of brown bullheads or shiners, there is an opportunity to improve area fishing by eliminating the bullheads and shiners.

Other management opportunities are to burn areas of brush to create more diversity in the age, size, and species of brush, and to fell lodgepole pines where they are encroaching on meadows, lakes, and other riparian areas.

111. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is nonmotorized dispersed area recreation. Maintain a trail system to access some of the lakes, however, leave others with no developed trail access. Close the area to motorized public use except for administrative, landowner, over-the-snow vehicles, or emergency vehicle access. Emphasize management of fish, wildlife, and visual quality in support of dispersed recreation. Continue grazing under extensive management, strive to reduce conflicts with recreation.

The area is unsuited for regulated timber management.

The desired future state includes a mosaic of old-age timber stands and fields of shrubs. Wet meadows will be maintained. Water quality will remain high. Lakes suitable for trout will be managed to provide harvestable trout populations. The high visual quality will be maintained.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive nonmotorized.
- B Visual Quality Objective - Retention.
- C Transportation Management Policy. Roads closed to motor vehicles except Rock Lake Road, which is open to landowners. Eagle Lakes, Fordyce Creek trail in the southeast, and roads to Faucherie (north) end Grouse Ridge Campground (southwest) will remain open. Trail development shall consider equestrian and hiker systems separately.
- D Off-Highway Vehicle Restrictions - Closed. Open to over-the-snow vehicles.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- AE Closed OHV
- A8 Developed Recreation & Interpretive Service Sites Management Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C3 Lake Fisheries - Nonstructural Improvement and Maintenance
- C4 Lake Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- DE Range Improvement - Structural (Permanent and Transitory)

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatable
- G3 Minerals Management - Leasable

- J1 Land Adjustments - Retain and Acquire

- L2 Mukiresource Road Access Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L13 Transportation Management, Trails - Restricted Use

- P2 Fire Protection - High Country Noncontinuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Monitor and regulate grazing use through permit administration and identify specific areas of conflict with recreationists

Permit motorized access to private landowner only, and only by permit

Attempt to acquire private lands as described on the Grouse Lakes Composite Plan to minimize conflicts between National Forest System and private land uses

Cooperate with the California Department of Fish and Game to eradicate the bullheads and shiners and to restock the lakes with trout

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

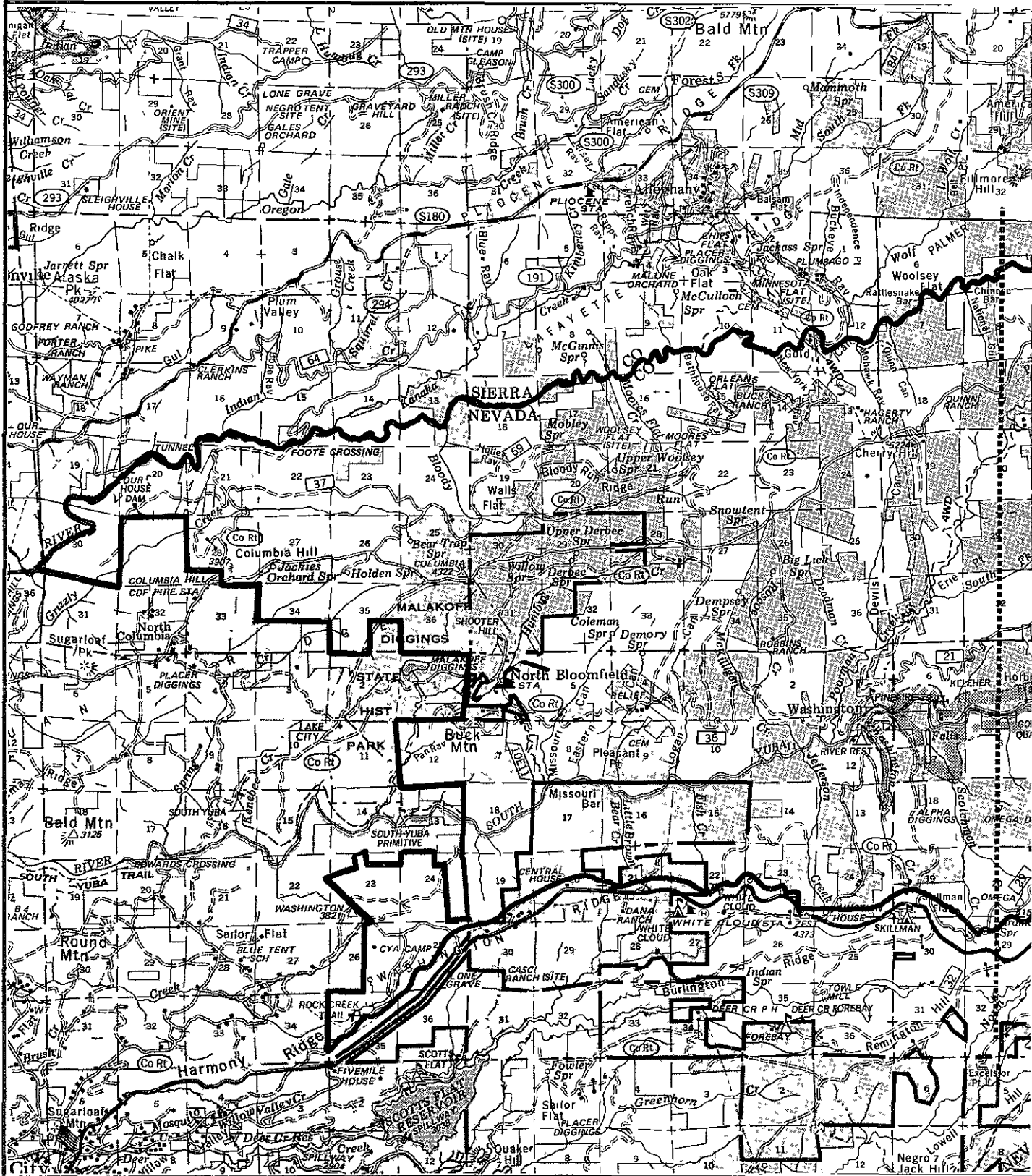
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 042

SOUTH YUBA

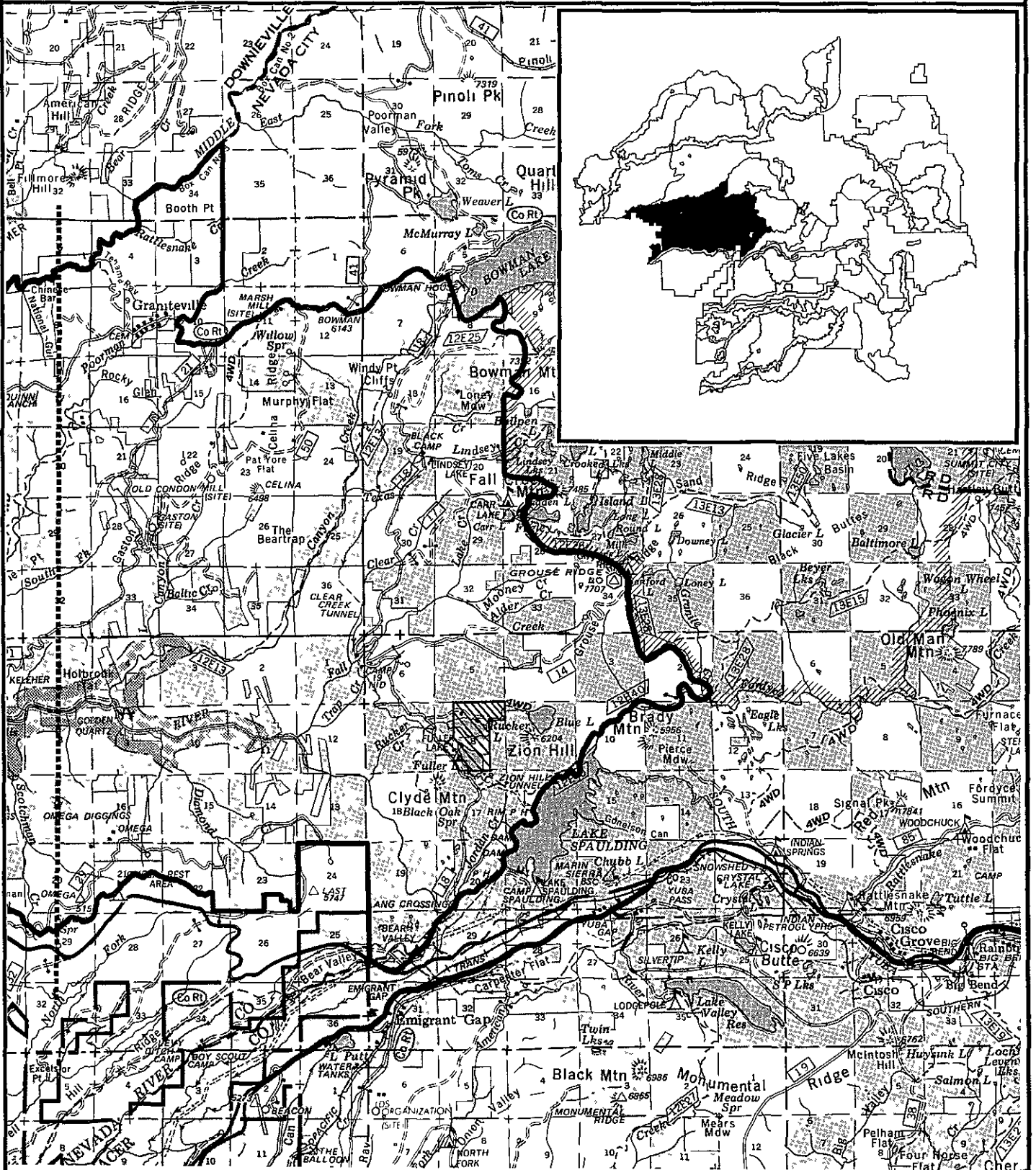
T18N, R11E



MANAGEMENT AREA 042

SOUTH YUBA

T18N, R11E



042 SOUTH YUBA

84,896 GROSS ACRES

49,911 NFS ACRES

I. DESCRIPTION

This management area (MA) is located between Highway 20 and the Middle Yuba River, from the Forest boundary on the west, and Grouse Ridge on the east. Elevations range from approximately 2,000 feet on the Middle Yuba River to 7,800 feet on Bowman Mountain. The area is well accessed. The primary roads into the area are the Tyler-Foote-Grantville, Bloomfield, Washington, Gaston, and Bowman Roads. Major drainages in this MA are the Middle and South Yuba Rivers.

In this MA, seventy-seven percent of the National Forest System land is productive forest lands. Timber-producing sites vary, but high sites predominate. There are 1668 acres of wetlands in this area.

Vegetation in this MA ranges from mixed conifer stands with large components of hardwoods (primarily black oak) and brush at lower elevations (western side) to stands of true fir at higher elevations (eastern side of MA). Stands of live oak occupy the south-facing slopes above the Middle Yuba River while mixed brush species cover higher elevation south-facing slopes. Past fires followed by reforestation have resulted in extensive plantations of primarily pine.

The area is rich in cultural history, from prehistoric use by Native Americans to nineteenth century mines, townsites, and logging areas. Townsites still inhabited in this MA are Washington, Relief, North Bloomfield, and Grantville.

Many areas are no longer productive forest lands because of past hydraulic mining: Alpha, Omega, Relief Hill, Moores Flat, and Woolsey Flat Diggings are examples of larger abandoned hydraulic mine sites that are still actively eroding. The most dramatic site of historical hydraulic mining is Malakoff Diggings State Historical Park, which is located on the western edge of the management area. The old Bloomfield Ranger Station is surrounded by the Park. Placer mining continues to be actively pursued in rivers, major streams, and old hydraulic mining sites. Numerous canals and flumes, which date from hydraulic mining days, are still evident. A portion of the Bowman Lake to Spaulding Lake flume is still in use for water distribution and power generation.

Approximately one-half of the area is privately owned, consisting of two major types of land ownership. Large acreages of land are owned by large timber/land companies and are intensively managed for forest products. The balance of private lands is in patented claims or tract parcels, typically from 1 to 40 acres in size. These small parcels are primarily residential with secondary agricultural and forestry land uses. This area has a history of large fires, and a very high fire hazard exists, particularly in areas below 5,000 feet, the area of interspersed private residential land.

The general visual quality of the area is typical of the western slope of the Sierras with limited variety and diversity. On the extreme eastern side, however, the scenic quality is high. Some portions of the area are visible from overlook points along Highway 20. A large variety of recreational use occurs throughout the management area. There are numerous trails within the area, such as the Missouri Bar, Tehama, and Canyon Creek Trails, Rock Creek Nature Trail, and trailheads into Grouse Lakes at Carr and Lindsey Lakes. There are picnic areas at Keleher and Golden Quark along the South Yuba River, and a campground at Carr Lake. The Bowman Road, which is paved to the Carr Lake turnoff, is the major recreation route into the management area. An organization camp at Lindsey Lake is operated by the YMCA under a special-use permit. The South Yuba River area, from the town of Washington up to Fall Creek, is closed to overnight camping due to high fire hazards. The State maintains a California Youth Authority Camp under special-use permit in the southwestern portion of the management area. The Middle Yuba River Canyon includes a portion of a former roadless area (part of the RARE I study but did not meet RARE II study criteria). Only limited road access exists into this canyon.

The Middle Yuba, Mt Zion, and Canyon Creek grazing allotments are in this MA.

Portions of spotted owl habitat areas K-1, L-1, M-1, N-1, and O-1 lie within this MA.

The area provides key deer winter range, holding areas, and high value summer range with two major deer migration corridors. There are numerous high-quality stream fisheries in the area. Some old, unstable mining sites are degrading stream quality. Selected wildlife emphasis species are deer, rainbow, brook and brown trouts, and the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Major issues stem from the Intermingled residential ownership in the area. Maintaining the visual quality, reducing the fuel hazard, providing for suitable grazing areas, and Improving high value winter deer range, are complicated by the ownership pattern. Changes in land ownership patterns and open range have created a conflict with private land. Lack of property boundaries, right-of-way needs, and competing vegetation limit effective timber and other resource management objectives. Bear clover and tan oak are particularly competitive with plantation seedlings on elevations below 4500 feet.

Water quality degradation from past hydraulic mining and other activities is a concern.

Residential land use of this area infringes on the winter deer range. This increases the need for winter deer range and other wildlife habitat. Improving and maintaining the present winter and summer deer range, as well as forage production, are opportunities for this MA. The Black Sands and Holden Springs areas are key winter deer range where vehicle use impacts deer during critical wildlife cycles on the remaining available lands.

Visual quality of the lands seen from Highway 20 overlooks (middleground) and from other high recreation use roads should be maintained. This concern focuses on lands seen by the recreating and traveling public. Similarly, protecting aesthetics in areas seen from Malakoff Diggins State Historical Park needs to be considered in management decisions.

There may be opportunities for reducing fuels by cooperation with other land owners. Fuel accumulations, steep topography, and increased use increases the potential for large, damaging wildfires, especially below 6,000 feet.

There is an opportunity to maintain dispersed recreation and primitive access by not upgrading the Bowman Road. The standard of the Bowman Road beyond Windy Point affects the recreational experience in the Bowman Lake area (MA039).

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated, intensive even-aged timber management. Emphasize range management on the transitory range opportunities created by timber harvest. In areas near residential private property, work closely with neighbors at the project level to minimize conflicts stemming from differences in objectives.

Emphasize wildlife and watershed values when managing streamside management zones, and spotted owl habitat areas. Unscheduled timber harvest may be practiced on lands unsuited for timber production such as existing recreation development sites, special-use permit areas, etc.

Perform intensive wildfire prevention activities, especially in the urban/wildland interface. Pursue opportunities for cooperative fuels management with adjacent private landowners.

Manage on long rotations for visual quality areas readily visible from Highway 20, Washington Road, Maybert Road, Graniteville Road, Bowman Road, roads leading to Grouse Ridge vehicle control area trailheads, and Missouri Bar Trail. These areas will also serve the needs of late successional wildlife species.

Manage brushland areas in a mosaic pattern to benefit indicator species.

Maintain the Middle and South Yuba Rivers in their primitive character by limiting motorized access to these rivers. Maintain closure of the South Yuba River above Washington to Fall Creek for overnight camping due to fire and access concerns. Maintain the Bowman Road to its current standards. Wild and Scenic river values will be protected for the Middle Yuba River and South Yuba River until such time as the suitability studies are completed and new management emphasis developed. The Middle Yuba River is potentially eligible for 'wild', 'scenic' or 'recreation' classification while the South Yuba River is potentially eligible for 'scenic' or 'recreation' classification.

The desired future condition for lands intensively managed for timber production is plantations through small sawlog-size stands of the mixed conifer type. Manage these stands on a short rotation schedule of 50 to 120 years. The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention initial VQO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on a short rotation basis. This latter category includes approximately 4,040 acres. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Resource Opportunity Spectrum - roaded natural except semi-primitive motorized along the Middle Yuba River, part of South Yuba River, and Canyon Creek from Hoibrook Flat to Windy Point Cliff
- B Visual Quality Objective - Retention for foreground seen from Bowman Road. Partial retention for foreground areas as viewed from Washington, Maybert, Grantville Roads. roads leading to Grouse Ridge vehicle control area trailheads, Missouri Bar Trail, and southerly views from Malakoff Diggins State Historic Park. Partial retention for the middle ground of Highway 20. Modification for remainder of area. Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have herein been assigned the modification VQO
- C Transportation Management Policy - Forestwide Standards and Guidelines apply. Close roads in Black Sands and Holden Springs areas during critical wildlife periods. The Bowman Road from Windy Point is not maintained for low clearance vehicles. Bowman Road will not be improved beyond its current standard north of the Windy Point Nevada County's Grantville Road is included in the Forest Highway System
- D Off-Highway Vehicle Restrictions - Southwest of Bloody Run Creek and the Grantville Road is designated routes only, except closed November 1 to May 1. This restriction can be amended if weather conditions are such that deer are not on the winter range. Semi-primitive motorized areas along the South Yuba River and Canyon Creek are designated routes only. Open for over-the-snow travel,
- E Forestwide Standards and Guidelines - All apply,

V. AVAILIABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A6 Closed OHV
- A8 Developed Recreation & interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- A18 Visual Resource Travel Route Viewshed Planning

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E6 Uneven-Age Cutting Method and Urban Wildland Interface
- E9 Special Cutting - Urban/Rural/Wildland Interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F3 Flow Timing Improvement

- F4 Soils Resource Improvement
- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables
- J2 Land Adjustments - Limited
- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L6 Trail Construction/Reconstruction - Special Requirements
- L7 FABO Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use
- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Improve deer winter range through hardwood and shrub management. Close roads to motorized vehicles in the important deer winter range areas when deer are wintering in these areas. Manage deer habitat to provide a 60/40 forage to cover mixture.

Continue restricting camping to developed sites and designated camping areas only along the road from Highway 20 to Washington, up the South Yuba River to Section 11, and along Canyon Creek to Section 3, as needed.

Reclaim eroding lands, as opportunities are available, in conjunction with timber, road construction, mining, and other work in the area. Reconstruct or obliterate existing roads that are subject to unacceptable erosion under new proposed timber sales.

Seek alternate funding through State cooperative programs to rehabilitate damaged watershed lands.

Encourage Nevada County government to zone for agricultural/forestry land uses. Do not improve the Bowman Road to a higher standard than currently exists.

Maintain visual quality in the Highway 20 middleground and along other visually sensitive routes by blending management activities into the natural landscape. Prepare a visual resource travel route management plan to identify the specific means of achieving the desired visual quality along Bowman Road.

Give landline surveys high priority for funding in the Forest's programs of work. Emphasize requiring rights-of-way to better manage National Forest System lands.

Treat fuels in the urban/wildland interface.

Develop spotted owl management plans for SOHAs K-1, L-1, M-1, N-1, and O-1.

VII. SPECIFIC MONITORING AND EVALUATING NEEDS

None

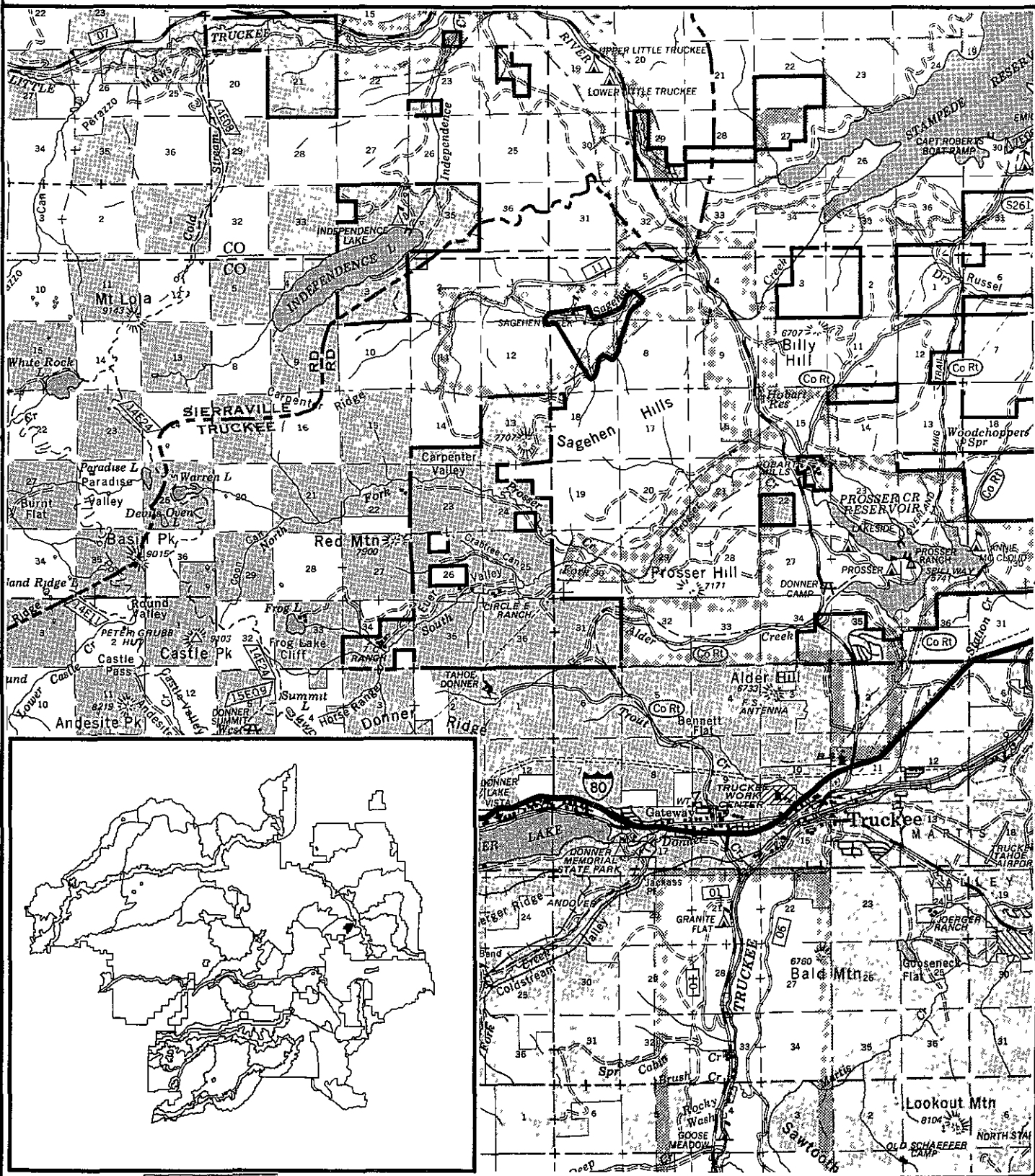
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 043

SAGEHEN STATION

T18N, R16E



043 SAGEHEN STATION

350 GROSS ACRES

350 NFS ACRES

I. DESCRIPTION

This management area (MA) is within the Sagehen Creek drainage and surrounded by Management Area 036 (Sagehen Basin). It is located approximately one-half mile west of State Highway 89. Elevations range from 6,300 to 6,700 feet with a north-south aspect. The area was railroad logged at the turn of the century. Grazing and trapping have occurred throughout historic times. The Donner Burn of 1960 borders the southern portion of the unit.

Numerous fens border Sagehen Creek with stringers of lodgepole pine. There are 107 acres of wetlands, and 350 acres of unsuitable productive forest land. Mixed conifer stands occupy the drier sites. Two perennial streams flow into Sagehen Creek within the unit. The Sagehen Road, 11-4, located north of Sagehen Creek, bisects the unit, and a portion is under permit to the University of California at Berkeley. This road is closed to motorized use by the public. A bypass route, 11, constructed as part of the Golden Timber Sale, will provide motorized public access to the upper portion of the Sagehen drainage. A forest development road, 11-10, accessing the Sagehen Hills, forms the southern boundary of the Sagehen Unit. U.C. Berkeley has a special-use permit developed in the 1950's to conduct aquatic ecosystem research in this area. A field station with numerous facilities is occupied year around. The MA lies within the Sagehen Range Allotment.

The selected wildlife emphasis species are rainbow and brown trout, and the riparian and meadow groups.

This MA contains the 30 acre Mason Fen Special Interest Area (SIA).

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Visual quality is a resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 89. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

Dispersed camping along Sagehen Creek has conflicted with research efforts. As a result, camping is prohibited.

U.C. Berkeley has shown interest in expanding their research special-use area to include the entire Sagehen Basin (MA 036). There are opportunities to continue the existing long-term research program.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to continue the existing special-use permit and manage the area for wildlife research. This area is unsuitable for regulated timber production.

Integrate management activities with the natural landscape to maintain the quality of the Highway 89 scenic corridor.

Identify the boundaries for the Mason Fen SIA and include in the SIA Implementation Plan.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Roaded natural.
- B. Visual Quality Objectives - Partial retention subject to research objectives from within the permitted area and retention for Mason Fen SIA. Partial retention within the developed sites. The management area will, however, meet the partial retention VQC when viewed as middle ground from travel routes and other occupancy sites.
- C. Transportation Management Policy - Closed to public motorized vehicles. (Road 11-10 is the boundary between MA 43 and MA 36, its direction is found in MA 36)

- D Off-Highway Vehicle Restrictions- Closed
- E Forestwide Standards and Guidelines - All apply except S&G #2

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A6 Closed OHV
- J2 Land Adjustments - Limited
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- P1 Fire Protection- Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The area holds unique research value for implications on future forest management activities. Until a plan is developed addressing future use, restrict those activities that conflict with research. The area is unsuited for regulated forest management. Prohibit OHV use except for research and administrative needs to manage resource values.

Continue to manage this area pursuant to the principles of the Protocol between the University of California, Berkeley and the Tahoe National Forest. The protocols may be revised as a result of the compartment planning process where the Tahoe National Forest will work with UCB to examine mutual needs and objectives.

Continue camping prohibitions.

The partial retention VQO ensures the visual quality of views from Highway 89.

VII. SPECIFIC MONITORING AND EVALUATION

Coordinate special-use research activities on an annual basis.

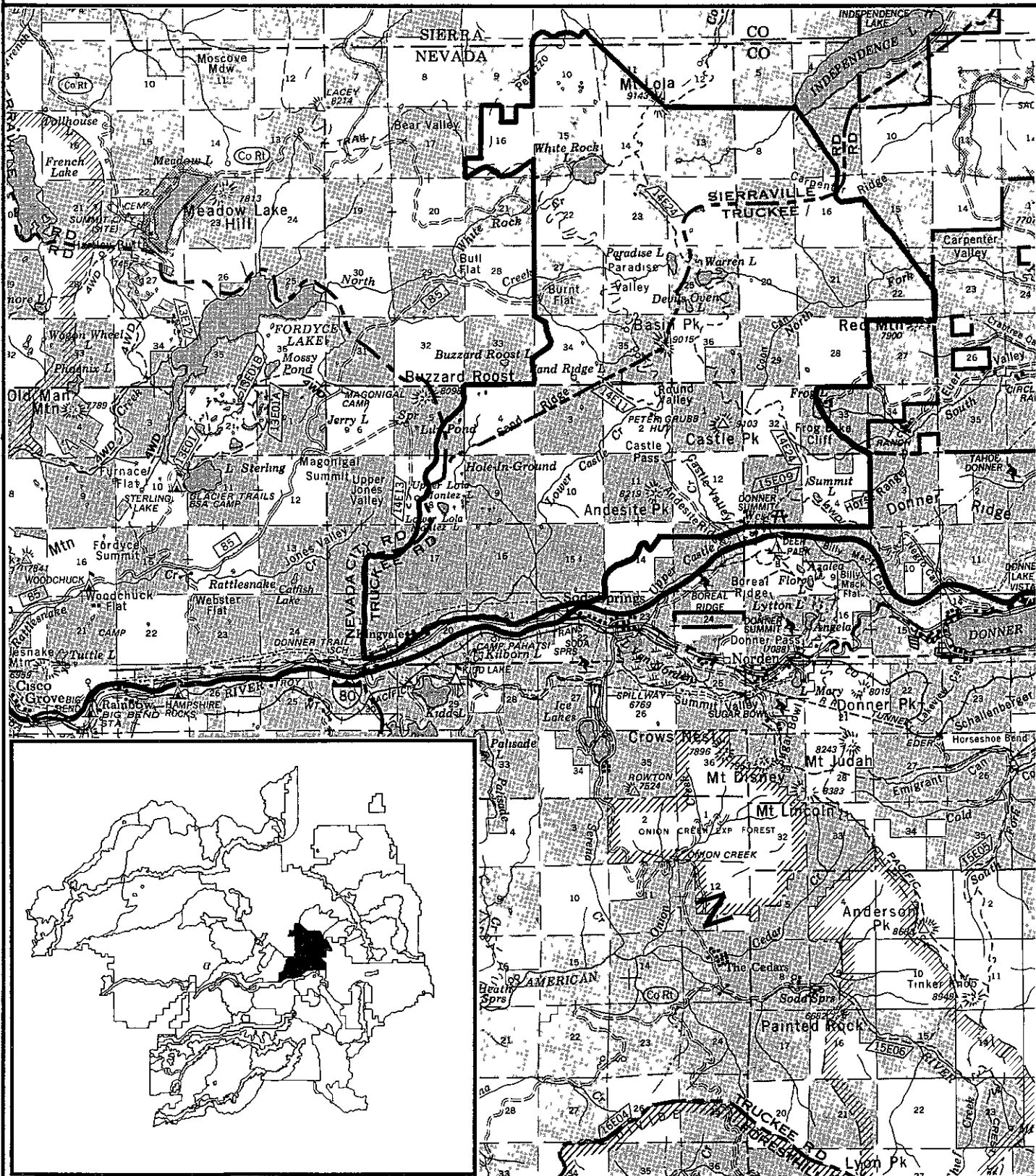
Involve the Pacific Southwest Forest and Range Experiment Station as part of the monitoring and evaluation.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 044

CASTLE

T18N, R14E



044 CASTLE

24,365 GROSS ACRES

10,784 NFS ACRES

I. DESCRIPTION

This management area (MA) is located along the crest of the Sierra Nevada between Castle Peak in the south and Mt. Lola in the north. The area contains portions of the Truckee and Sierraville Ranger Districts. This area of high elevations (7,500 to 9,000 feet) is steep, with rocky soils, and is covered by sparse vegetation. Stands of timber, primarily true fir, and meadows are scattered throughout. There are 1,208 acres of wetlands. There are 43 acres of unsuitable productive forest land. Castle Peak with its surroundings are among the most scenic areas in the Tahoe National Forest.

The area contains several jeep trails and logging roads but is for the most part unroaded. Access to most of the timber is difficult. A large private company owns much of the intermingled private land within the area. Several of the private landowners have, or will soon have, roaded and harvested the timber on their properties. Several foot trails exist, including a portion of the Pacific Crest Trail, which crosses the area from Castle Pass to White Rock Creek. One shelter under special-use permit to the Sierra Club is located in Round Valley. Castle Valley is used by Pacific Southwest Forest and Range Experiment Station personnel in the winter for research relating to land management activities.

Several small lakes and perennial streams exist within the area. The stream that feeds Independence Lake at the west end in Section 8 is the only known spawning area for the lake's population of Lahontan cutthroat trout. Perazzo Canyon, which forms the northwest boundary of the area, is a candidate stream for introduction of Lahontan cutthroat trout.

The selected emphasis species are deer, rainbow, brown, brook, and Lahontan cutthroat trout, and the meadow, wetlands, and riparian groups. This MA contains habitats suitable for willow flycatchers. The northern portion of Section 10 (headwaters of Perazzo Canyon) contains an unusual diversity of botanical species. Mountain maple, ash, dogwood, hemlock, heather, and numerous unidentified succulents and wildflowers are present.

The southern portion of the area has intensive dispersed winter recreation use from both the general and commercial publics. The limiting factor for winter use is parking. Parking on the Castle Valley Road has caused congestion problems. Parking at either East or West Interstate 80 roadside rests for back country travel is illegal. Boreal Ridge ski area has an agreement with the California Snow Park program to provide parking along the frontage road south of the Interstate. All parking is outside this management area. The entire area also is used by recreationists during the summer months.

This area includes a portion of the inactive White Rock Sheep Allotment. It also contains the Summit and a portion of the Rattlesnake Grazing Allotment. There are some eroded areas in the northern portion of this area.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Conflicts between motorized and non-motorized recreation users have occurred within the area, both summer and winter. The motorized publics have requested additional routes into the area, particularly from the south. Thus far, the development of routes has been constrained by the lack of rights-of-way across private parcels and by difficult terrain. No over-the-snow travel routes have been established through Castle Valley, resulting in that portion being closed since 1981.

Summer motorized use has also resulted in watershed resource damage, especially in the White Rock area. Several individuals and groups want to maintain the roadless character of the area and want the Forest Service to acquire the private land in the area.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Interstate 80. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

There is a concern over the spawning area for Lahontan cutthroat trout and an opportunity for introduction of this species into Perazzo Creek. Protection of willow flycatcher habitat is a management concern.

An opportunity exists to reopen the White Rock Grazing Allotment (possibly for use of both cattle and sheep).

There is an opportunity to evaluate the unusual diversity of botanical species in the northern portion of Section 10.

There is an opportunity to resolve the long-standing winter parking issue by acquiring land near I-80 and developing a parking facility. There is an opportunity to develop a cross-country ski trails system in conjunction with private property developments.

111. RESOURCE MANAGEMENT EMPHASIS

Retain and improve, where possible, the willow flycatcher habitat

The resource management emphasis is to enhance dispersed recreation opportunities and maintain the remote qualities that make the area attractive. Continue efforts to separate motorized and non-motorized recreation users by implementing the designated route concept. Close the Castle Valley part of the MA to over-the-snow vehicle use. Manage timber primarily through special cutting practices to maintain the health and vigor of the timber stands and to enhance other resource values, i.e., range and wildlife. This will result in a nearly natural-appearing landscape with few user conflicts. Rehabilitate eroded areas.

Maintain the scenic quality of views from I-80

Permit development of cross-country ski-training facilities in conjunction with development on adjacent private lands. Continue to work with the State and private sector to develop a public parking solution for winter sports.

Retain National Forest System lands in this area and acquire private lands as they become available. Consider land ownership adjustment with adjacent or other owners. Secure rights-of-way across private land as needed.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive motorized
- B Visual Quality Objective - Retention for the foreground and middle ground as viewed from interstate 80, Castle Valley, Round Valley, all trails, and other concentrated use areas. Partial retention in any remaining background area.
- C Transportation Management Policy • Forestwide Standards and Guidelines apply to open portions
- D Off-Highway Vehicle Restrictions • The Pacific Crest Trail is closed. Designated routes only, summer. Open over-the-snow, except in the Castle Valley and Round Valley areas, where travel will be restricted to designated routes only.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management. Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C3 Lake Fisheries - Nonstructural Improvement and Maintenance
- C4 Lake Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method

- E7 Special Cutting
- E9 Special Cutting - Urban/Rural/Wildland Interface
- E10 Artificial Sand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trail bike
- L6 Trail Construction/Reconstruction - Special Requirements
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use
- L14 Pacific Crest National Scenic Trail Management

- P2 Fire Protection - High Country Non-Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Reduce watershed resource damage by confining summer OHV use to designated routes. Revegetate and stabilize problem areas.

Minimize Nordic ski/snowmobiling conflicts by restricting Castle Valley and Round Valley to designated routes only. Seek land ownership adjustments that will enhance dispersed recreation by acquiring key parcels.

Identify and retain all willow flycatcher habitat

The VCO's established ensure that the scenic quality of the I-80 corridor is maintained.

Address specific issues of providing for non-commercial Nordic cross-country ski opportunities in site-specific, project-level environmental analyses

VII. SPECIFIC MONITORING AND EVALUATION

Monitor the effects of range use on water and soil resources in sensitive areas. Monitor user impacts to reopening of White Rock Grazing Allotment. Monitor recreation use in the vicinity of the Vail and the Lahontan cutthroat trout spawning in Section 8, and evaluate the potential for introduction of this species in Fern Canyon.

Monitor willow flycatcher extermination.

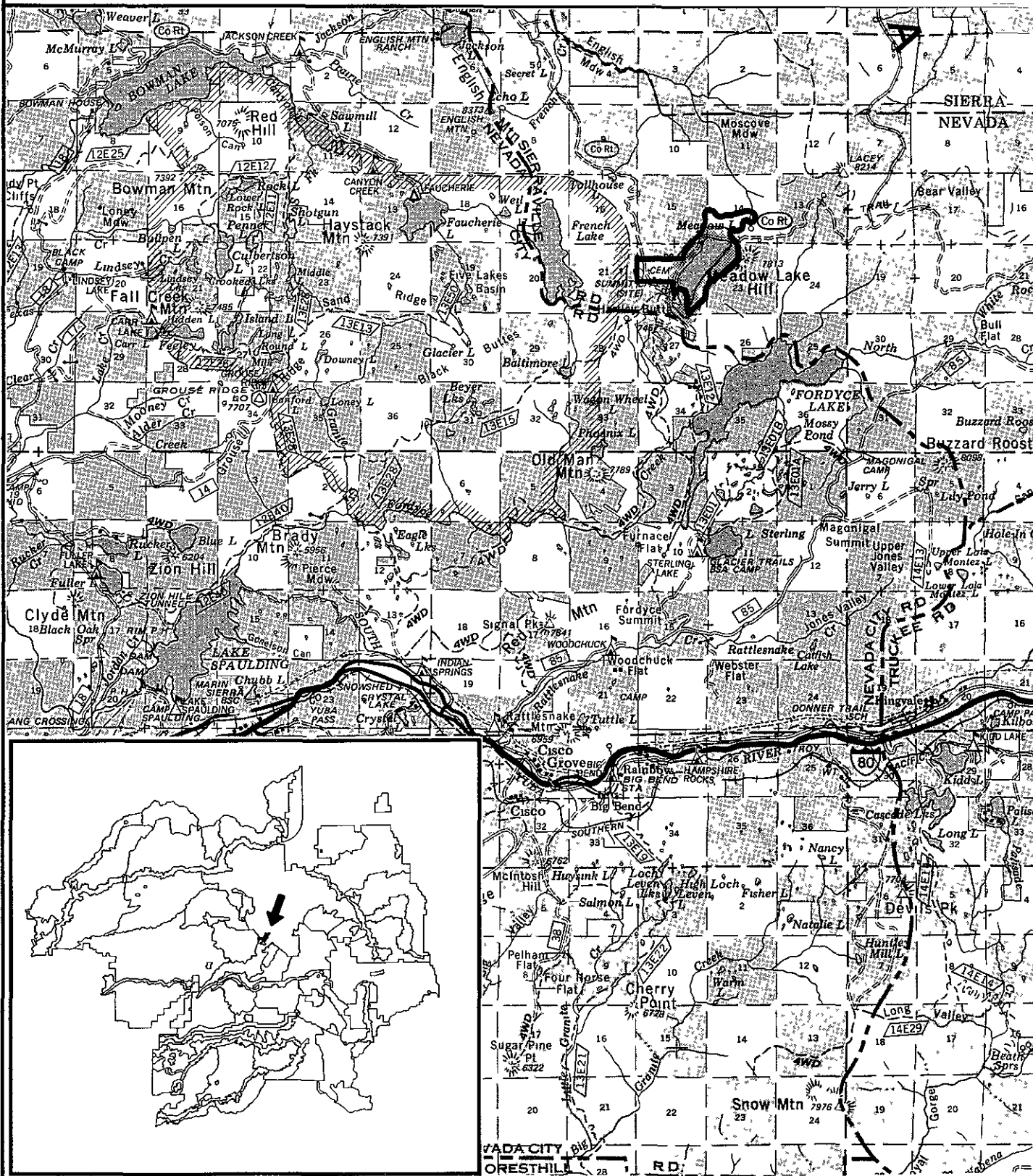
Identify unusual botanical area in northern portion of Section 10

1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 045

MEADOW

T18N, R13E



045 MEADOW

452 GROSS ACRES

412 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 13 air miles southwest of Sierraville and 20 air miles northwest of Truckee. The elevation of the area is approximately 7,200 feet. The vegetation in the area varies from red fir-lodgepole timber stands to meadows in the wet, flat areas. There are 42 acres of wetlands in this MA. There are 0 acres of unsuitable productwe forest land.

Meadow Lake, a reservoir, was constructed in the area around 1863 by the South Yuba Water Company. At that time the reservoir water was used for mining purposes. Presently, Pacific Gas and Electric Company owns and manages the reservoir and uses the water for both power generation and irrigation.

The area has experienced significant historical mining activity. Most of the mining operations took place south of this management area, including Summit City, which was constructed sometime in the 1860's with upwards of 10,000 people residing there. After several years of operation, the mines became unprofitable, and the residents left the area.

In addition to the historic values of the area, there are prehistoric remains, including the Meadow Lake petroglyph site, which is on the National Historic Register of Historical Places.

Mineral exploration is still occurring adjacent to this area but in a limited way. Some cattle grazing and logging occurs in and around the area. A portion of the English Cattle Allotment is within this MA. The primary activity in the area is dispersed camping and off-highway vehicle use. Many people camp along the lake shoreline throughout the summer months.

Every summer the California Association of 4WD Clubs holds their annual 'Sierra Trek' in this area. It's a three-day event that draws approximately 700-900 people. In 1985, state 'Green Sticker' dollars were used to construct a rustic camp with restrooms for the 4WD Clubs' use and other public use.

The selected emphasis species is rainbow trout.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Several concerns identified are mineral exploration and its impact on the lake and adjacent areas, dispersed recreation and its impacts on the shoreline and surrounding area, and protection of the cultural resources.

Dispersed camping has caused resource damage, resulting in restricting camping to developed sites and designated camping areas only.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize developed and dispersed recreation; develop a dispersed recreation plan.

Protect cultural resources.

The desired future condition is similar to the present condition. Withdraw the campground and cultural site from Mure mining activities, and continue to allow timber management and grazing that are in harmony with the recreation use. Practice regulated timber management through special cutting practices.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rooded natural
- B Visual Quality Objective. Partial retention within the developed sites. end also meet the partial retention VQO when viewed as middleground from travel routes and other occupancy sites Partial retention for remainder
- C Transportation Management Policy. Forestwide Standards end Guidelines apply
- D Off-Highway Vehicle Restrictions - Restricted, motor vehicle travel on designated routes only, Open to over-the-snow vehicles
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Mher Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management- Transitory Range Type (Extensive Management)
- D7 Range Improvement- Nonstructural (Permenent and Translatory)
- D8 Range Improvement- Structural (Permanent and Translatory)

- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Wtthdrawals

- J2 Land Adjustments - Limited

- L2 Multiresource Road Access Development- Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian, end Trailbike
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L13 Transportation Management, Trails. Restricted Use

- P5 Fire Protection - Visual, High Use. Reservoirs, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Attempt to resolve the dispersed recreation concern by preparing a management plan that discusses such management strategies as the development of rustic camp facilities, placement of traffic barriers, signing, and law enforcement.

Resolve the mineral exploration concern by applying Prescription G¹ and requesting mineral withdrawal on developed sites

Continue to restrict camping to developed sites and designated camping areas only

Protect cultural resources by managing recreation use, withdrawing the historic site from mining, and educating and informing the public of the need for protection.

VII. SPECIFIC MONITORING AND EVALUATION

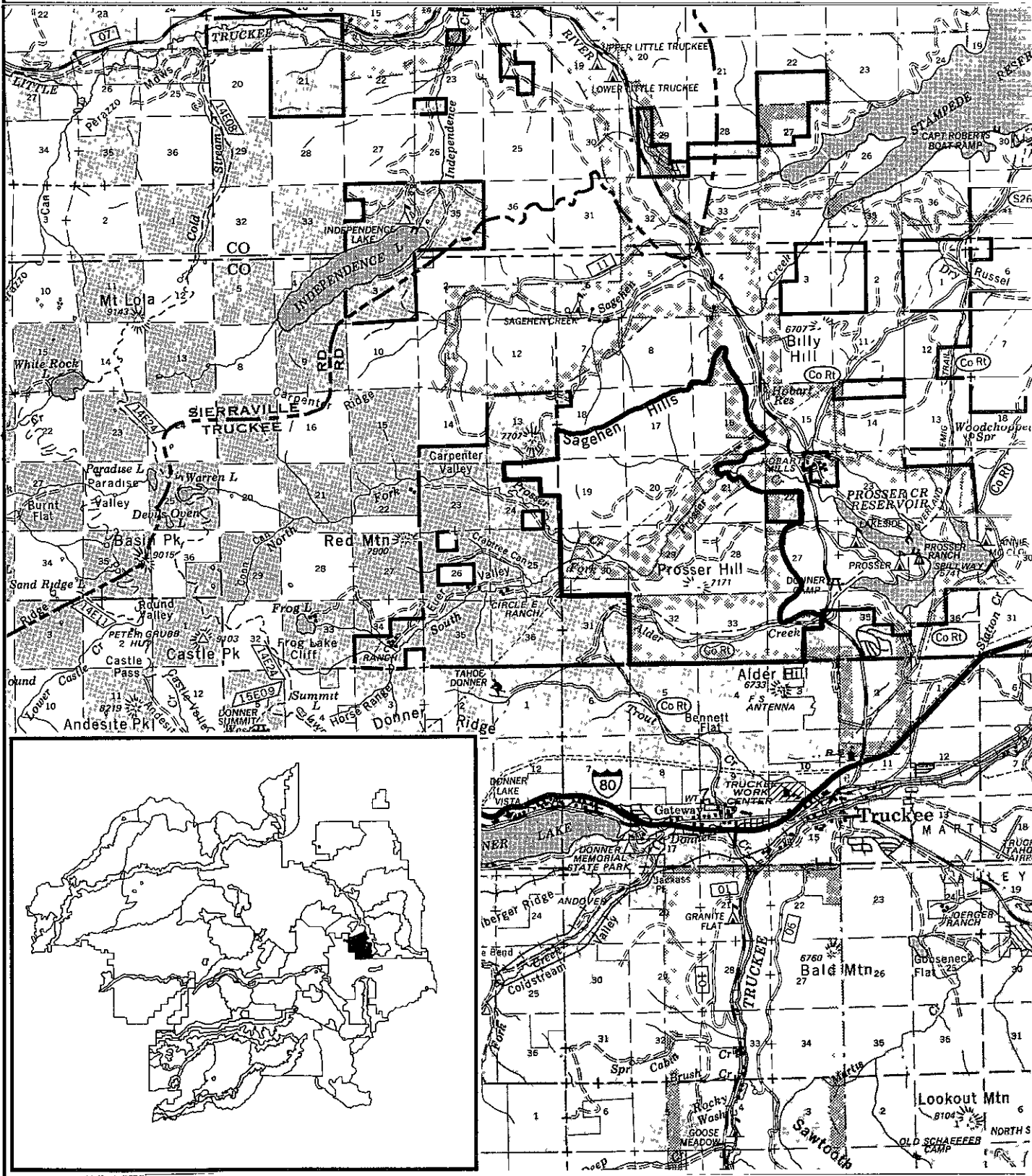
Monitor the National Historic Register site for needed additional protection measures

- 1/ Resource Support Element Maps and Forestwide Standards and Guidelines
2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 046

PROSSER HILL

T18N, R16E



046 PROSSER HILL

8,232 GROSS ACRES

8,232 NFS ACRES

I. DESCRIPTION

This management area (MA) is bounded by the crest of the Sagehen Hills on the north and Highway 89 on the east. Alder Hill and the Tahoe-Donner subdivision are to the south. The private land in Euer and Carpenter Valley form the western boundary. Alder and Prosser Creeks are the main drainages. Elevations range from 6,000 to 7,000 feet. Slopes range from flat to 40 percent. Prosser Hill is the dominant topographic feature. Historic use from the 1850's includes grazing, and railroad logging. The Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area. The majority of the area burned in the 1960 Donner Burn. This area is visible from Highway 89, from Alder Creek Road, and from the Tahoe-Donner subdivision. Much of the area is in plantations with some interspersed fields of shrubs. The flats are heavy to Jeffrey pine with lodgepole pine occurring in the wetter areas. Mixed conifer stands occur at the higher elevations that were not burned. There are 185 acres of wetlands, and 40 acres of unsuitable productive forest land. The transportation system is well developed except in the burned areas where the roads are substandard. A portion of the Euer Valley Range Allotment lies within this area. Special uses include power lines and road use permits. Multi-track Nordic skiing is a popular dispersed recreation activity. Parking for this activity occurs off Alder Creek Road and State Highway 89 at undesignated parking areas.

Selected emphasis species are deer, brook, rainbow, and brown trouts, and the riparian group. This area contains key fawning habitat for deer.

An off-highway vehicle management plan, which included this area, was adopted in May 1986. The staging area for the Prosser Hill OHV staging area, located in MA 19, is under construction. This year-round staging area has been developed in conjunction with the California Department of Parks and Recreation's OHV program with the purpose to provide safe parking and information to visitors.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is a concern about maintaining visual quality adjacent to the Alder Creek County Road as seen from the neighboring subdivision. This road is one of two accesses into the Tahoe-Donner subdivision.

Extensive young plantations and fields of shrubs, combined with periods of high fire danger and occupancy, provide the potential for another large, damaging fire.

There is an opportunity to reduce uniform stands and to increase vegetation diversity for wildlife, aesthetics, wildfire protection, insect protection, and other silvicultural objectives.

Dispersed camping, resulting in resource damage, has occurred along Prosser Creek, resulting in restricting camping to developed sites and designated camping areas only.

There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation management activities.

Visual quality is a critical resource management concern within this management area. The concern focuses on lands seen as middle ground from Highway 89. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

The opportunity exists to continue rehabilitation of the burned areas through coordinated timber management and visual quality practices. Both scenic and watershed damage can be improved by special cutting and revegetation efforts.

Some residents living adjacent to National Forest System Lands within this MA have expressed concern that Forest Service management activities would alter their 'green belt' that served as parks, visual screen, and open recreation areas for their neighborhood.

There is an opportunity to improve the habitat in the key fawning area.

The opportunity exists to provide more fuelwood as a result of intensive forest management.

111. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitory range opportunities created by timber harvest.

Emphasize wildlife and watershed values when managing in streamside management zones. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing and potential recreation development sites, special-use permit areas, etc.

Emphasize visual and water quality when harvesting timber along Alder Creek Road, Alder Creek, in the middleground of Highway 89, and adjacent to subdivisions.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-size stands of the mixed conifer type. Manage these stands on a long rotation schedule. The future condition in red fir, lodgepole pine, and high elevation (generally above 6,000 feet) mixed conifer stands where true firs are the major species consists of even-aged plantations through large saw timber-size trees. Rotation ages for these stands will be 150+ years. The remaining land within the management area will be similar to the present condition.

Manage the vegetation using techniques to rehabilitate or enhance the potential character where the vegetation has been damaged by fire or biological forces. Convert wildfire-related brushfields and understocked plantations to fully stocked timber stands, particularly on the Donner Burn.

Continue working with State and local agencies to provide and expand parking for off-track Nordic skiing. Prohibit commercial and/or competitive OHV uses within the management area. Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include this trail into the National Historic Trail System.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum. Roded natural
- B Visual Quality Objective - Partial retention in areas seen from Alder Creek, the Alder Creek County Road, and the middleground of Highway 89, and adjacent subdivisions, enhancement in the historic burns: modification for the remainder of the area
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Designated routes only, summer Open, over-the-snow
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic CrossCountry Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management. Permanent Range Type (Extensive Management)
- D5 Range Management. Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven-Aged Management
- E9 Special Cutting - Urban/Rural/Wildland Interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F4 Soils Resource Improvement

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasable
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleable

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multi Road A Development - Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian and bike
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated
- L10 Transportation Management, Roads - Restricted
- L11 Transportation Management, Trails - Open
- L12 Transportation Management, Trails - Restricted
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Maintain the scenic quality in the Alder Creek County Road foreground and Highway 89 middle ground by achieving the partial retention VQC.

Upgrade roads to reduce erosion when possible on a project-by-project basis. This may include relocation, realignment, and improved drainage. Manage OHV opportunities via the 'Sagehen OHV Project', (DN/FONSI signed May, 1986)

Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in "The Overland Emigrant Trail Through The Tahoe National Forest," until more refined evidence is disclosed

Continue to restrict camping to developed and designated sites only along Prosser and Alder Creeks

Provide for fuelwood through timber stand improvement and slash disposal

It is the responsibility of developers, in consultation with county planning agencies, to provide for "greenbelts" and parks for communities. It is not a Forest Service responsibility to provide subdivision amenities. However, the Forest Service will continue to analyze the effects of off-site impacts on adjacent lands during project-level planning

Sacrifices of some short-term visual objectives will be made to enhance long-term visual quality as burn scars are rehabilitated

Increase vegetation diversity through regeneration and intermediate harvesting, fuelbreak construction, and other stand management activities, including planting of other locally adapted species

Treat fuels complex to a level necessary to allow suppression forces to meet burned area objective

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitor County zoning and land use regulations for coordination of County and Forest land management objectives

Monitor health and vigor of larger plantations and effectiveness of treatments aimed at increasing vegetation diversity

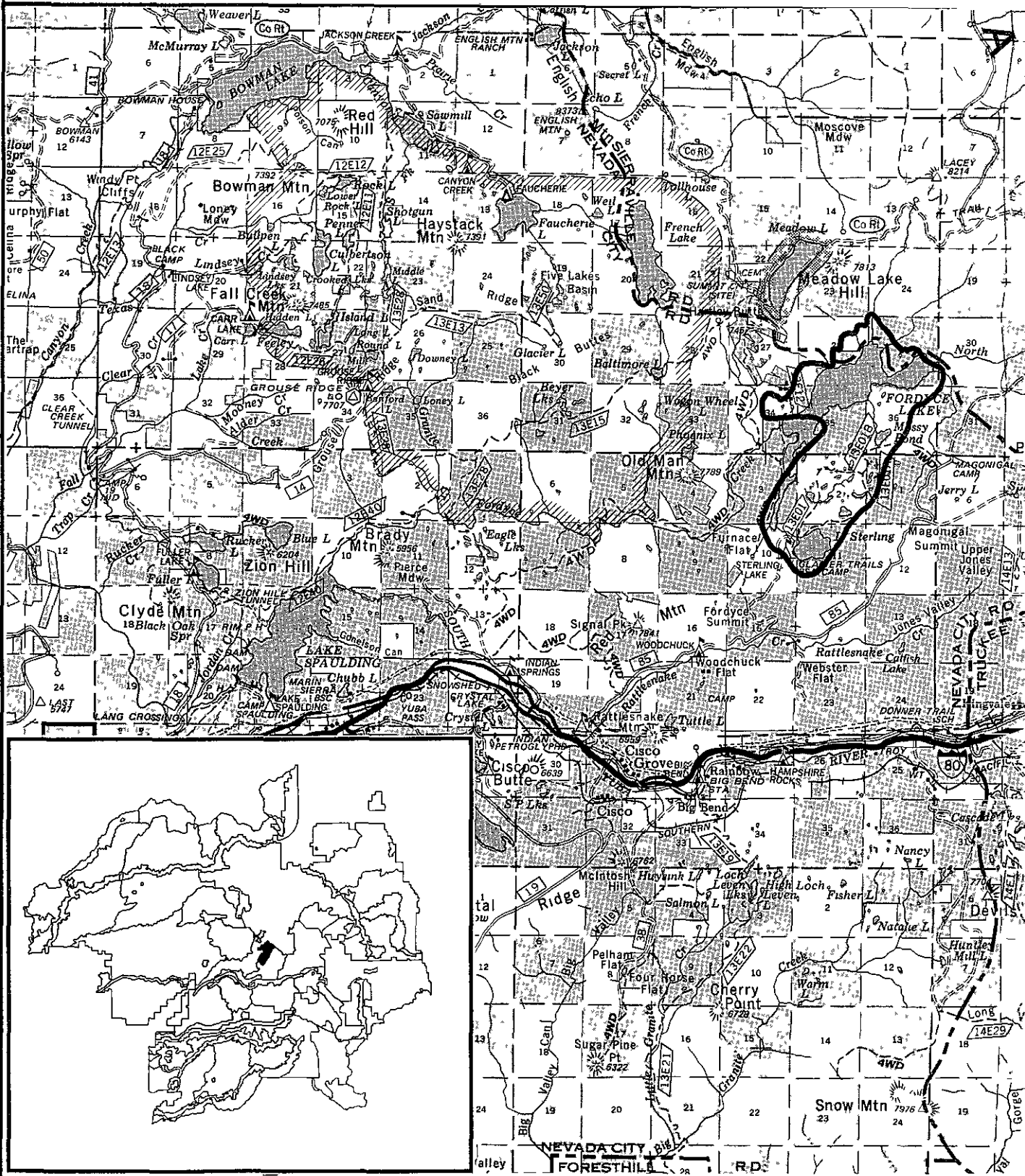
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 047

FORDYCE

T18N, R13E



047 FORDYCE

2,036 GROSS ACRES

594 NFS ACRES

I. DESCRIPTION

This management area (MA) contains Fordyce Lake, Sterling Lake, Mossy Pond, and numerous small pothole lakes. The vegetative mosaic consists of true fir and lodgepole pine stands along with meadow areas. Much of the area is lake surface and barren rock. Access to the area is fairly primitive, via the Rattlesnake, Fordyce, and Sterling Lake roads. There are 17 acres of wetland in this MA. There are 323 acres of unsuitable productive forest land.

The majority of the MA is private property, owned largely by a major timberland company and PG&E.

Developed areas include a Forest Service campground and a Boy Scout Organizational Camp under special-use permit at Sterling Lake. The Boy Scout camp is located on both National Forest System and adjacent private land. Dispersed recreation occurs throughout the MA, particularly in and around the various lakes. A Forest Service trail loop from Sterling Lake accesses many of the scattered pothole lakes.

The two major reservoirs and some of the small pothole lakes contain trout and provide a high quality fishery. Part of the area is within the Canyon Creek Cattle Allotment.

The selected emphasis species are deer, rainbow and brook trout, and the wetlands, riparian, and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The MA is used at a moderate to heavy level for both developed and dispersed recreation. Visual quality and access are concerns since these enhance the type of recreational experience available.

There is a concern that the existing fisheries and water quality should be maintained at their high quality level. The meadow component of the area has been encroached upon by lodgepole pine.

Fishery and waterfowl habitat development are opportunities, particularly by the scattered small pothole lakes.

III. RESOURCE MANAGEMENT EMPHASIS

Resource management emphasis is water-oriented recreation. Maintain primitive vehicle access to and within the area. Emphasize retaining a predominantly natural landscape. Maintain the existing diversity of vegetative cover, including mature and overmature coniferous trees. Timber lands in this area are unsuited and will not be managed on a regulated basis. Manage the campground and organization camp to protect the water quality of Sterling Lake and provide for user safety.

Emphasize fisheries development in coordination with the California Department of Fish and Game. Emphasize waterfowl habitat improvement and meadow reclamation from lodgepole pine encroachment.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive motorized.
- B Visual Quality Objective - Retention for foreground as viewed from Fordyce Lake. Partial retention within the developed sites. The sites will, however, meet the retention VQO when viewed as middle ground from travel routes and lake surface. Partial retention for remainder of area.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply. If new local timber access roads are developed, they will be closed after use.
- D Off-Highway Vehicle Restrictions - Designated routes only - summer. Open to over-the-snow travel - winter.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-County Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management Public Sector
- A9 Recreation Management (Private & Mher Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Mher Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C3 Lake Fisheries - Nonstructural Improvement and Maintenance
- C6 Midsuccession Vegetation Management
- c 7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G4 Minerals Management - Leasable Withdrawals

- J2 Land Adjustments - Limited

- L2 Muhiresource Road Access Development - Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L6 Trail Construction/Reconstruction - Special Requirements
- L6 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management Trails - Open

- P5 Fire Protection - Visual, High Use, Reservoirs, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

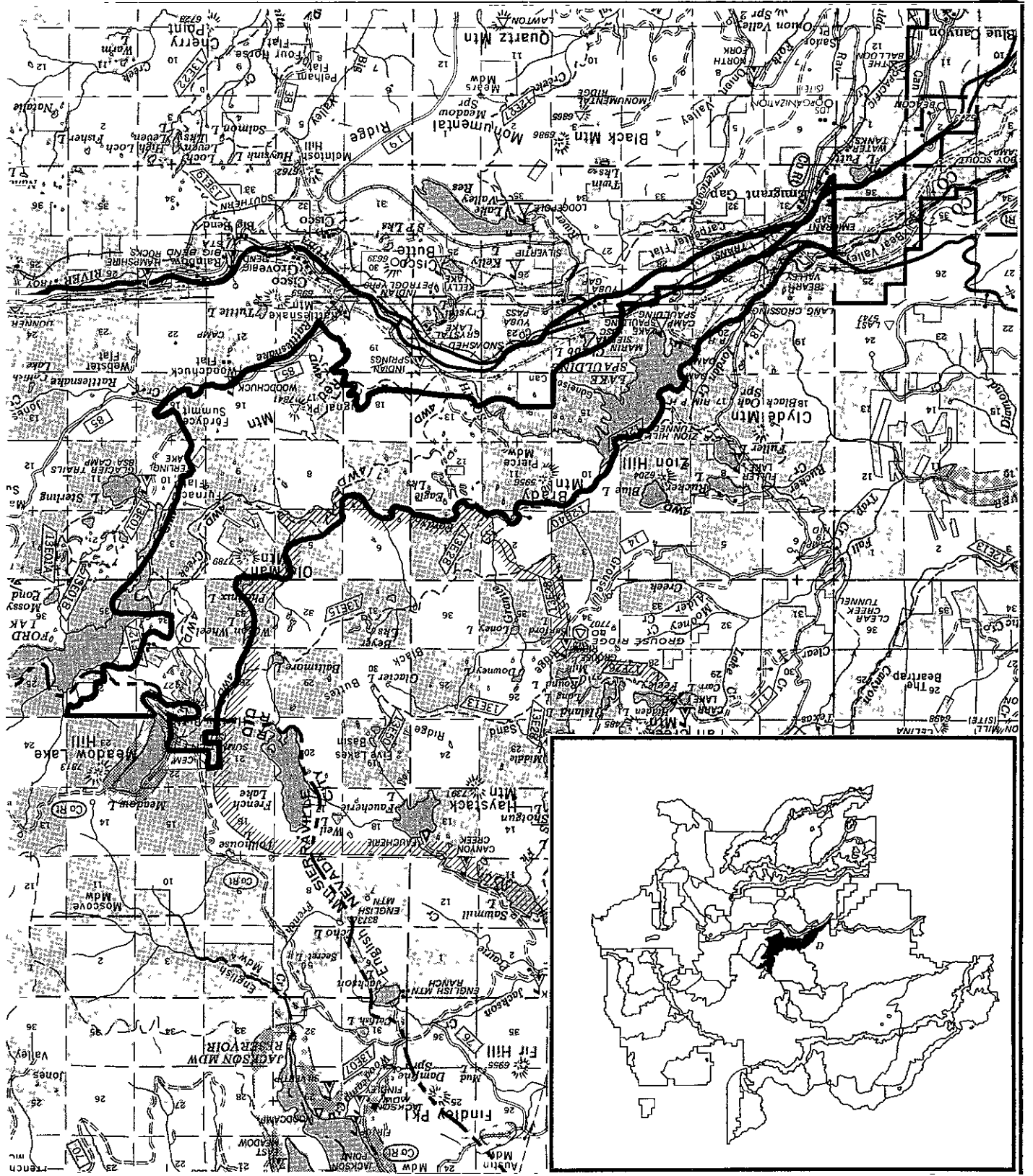
Maintain the primitive access in the MA. Meet visual quality objectives in the MA. Manage developed sites and OHV use for public safety and water quality protection

Continue Forest Service maintenance of the public campground at Sterling Lake. Continue Forest Service administration of the Boy Scout camp at Sterling Lake

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V



MANAGEMENT AREA 048
RED
T17N, R13E

048 RED

13,968 GROSS ACRES

5,237 NFS ACRES

I. DESCRIPTION

This management area (MA) extends north of the Interstate 60 corridor from Rattlesnake Creek and the Fordyce Road on the east, south to near Meadow Lake, and along Fordyce Creek and Lake Spaulding on the north and west. A portion extends west along I-80 to the vicinity of Emigrant Gap, but this portion includes only private lands. The elevation ranges from approximately 4,600 feet in the vicinity of Emigrant Gap to 7,840 feet at the top of Signal Peak. The vegetation is characterized by red fir, mixed conifer with white fir largely predominating, lodgepole pine, wetland and meadow types, and shrub areas. In general, the area has mostly shallow, rocky soils and large amounts of barren rock areas. Much of the timbered areas are in isolated pockets of soil. There are 316 acres of wetlands. There are 1,076 acres of unsuitable productive forest land.

Easy access to the western (private) portion of the MA is provided by the Bowman Road (FS #18) and Highway 20. Access within the bulk of the area is primitive. The Rattlesnake Road (FS #85) skirts the southeastern edge of the management area. Remaining access within the area is via four-wheel drive roads and routes such as portions of the Fordyce and Eagle Lakes Roads and the Red Mountain, Signal Peak, and Fordyce Creek four-wheel drive routes. Off-highway vehicle use of this area is high due to the popularity of these four-wheel drive routes. The Fordyce Creek four-wheel drive route is used for the annual Sierra Trek event. A trailhead at Eagle Lakes provides nonmotorized access to the lakes area, as well as a trail that heads north into the Grouse Lakes Vehicle Closure Area, linking with the trail system in MA 41. Portions of the Canyon Creek and Rattlesnake Allotments are within this MA.

There is a Forest Service campground, and an organization camp operated by the Placer-Nevada 4-H Club organization under special-use permit at Woodchuck Flat on the Magonigal Road. Recreational use of the management area is dispersed, primarily around Eagle Lakes and Fordyce Creek and along OHV routes. Generally, high scenic quality exists within the area.

Hunting use is fairly heavy, and a deer migration route crosses through the area. High quality fisheries exist in Fordyce and Rattlesnake Creeks. Waterfowl nesting improvements have been made.

Selected emphasis species are deer, rainbow and brown trout, smallmouth bass, and the wetland, riparian, and meadow groups. The area contains key fawning habitat for deer.

There has been a significant amount of mineral exploration in the area, especially near Meadow Lake and on Old Man and Red Mountains. Evidence of these activities is still visible, and current claims exist in some of these areas today. Economical extraction of gold from the ores of this area is a problem that has never been solved and which has led to boom-and-bust development patterns in the past.

A portion of the Overland Emigrant Trail traverses the area.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The slopes and rock outcrops make road construction formidable, especially in view of predicted benefits. A concern is maintenance of the existing primitive access which is desirable in terms of meeting dispersed recreation needs. Visual quality is a concern for on-site users and people viewing the area from Interstate 80.

Possible effects of proposed mining operations could negatively affect the primitive nature of the access of the area and/or not meet selected visual quality objectives.

There are opportunities to improve wildlife habitats, especially in the fawning areas in the brushy wetland and meadow areas. Waterfowl nesting improvements have been made, and further opportunities are available.

There is a concern that management activities could adversely affect the Overland Emigrant Trail. Significant segments of the trail need to be protected from disturbance to maintain its historical integrity.

111. RESOURCE MANAGEMENT EMPHASIS

The predominant resource management emphases for this MA are dispersed recreation and wildlife habitat improvement. An objective of management for dispersed recreation is to maintain the existing primitive access within the area. Emphasize shrubs, wetland, and meadow area management to produce more accessible, higher-value forage for wildlife. Emphasize reclaiming meadows, improving riparian vegetation, and waterfowl nesting opportunities. Maintain fisheries at the present high-quality levels. Emphasize timber and range management on a regulated basis in Section 13, using special cutting practices. Emphasize meeting visual quality objectives.

Emphasize special fire management to prevent fires during periods of high use in the recreational areas. Emphasize fuels treatment along travel routes. Initial attack responses may be modified during periods of low or moderate fire danger.

The desired future condition is to maintain the existing diversity and extent of vegetative cover while producing various age classes of shrubs and reclaiming meadow areas where appropriate. In Section 13, various age classes of trees (0-150 years) would produce a mosaic on the productive forest lands.

Maintain the historical integrity of the Overland Emigrant Trail.

Wild and Scenic River values will be protected for the South Yuba River until such time as the sustainability study is completed and new management emphasis developed. The River is potentially eligible for 'scenic' and 'recreation' classification.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive motorized except roaded natural in western half of section 18, T.17.N, R.13 E
- B Visual Quality Objective - Partial retention in Section 13. Retention for the remainder of the area.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply. If new local timber access roads are developed, they will generally be closed to maintain the existing primitive access.
- D Off-Highway Vehicle Restrictions - Open. Selected OHV routes will be promoted for the 'Adopt a Trail' program.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-County Skiing
- A4 Open OHV
- A8 Developed Recreation & Interpretive Sewice Sites Management, Public Sector
- A9 Recreation Management (Private & Mher Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- A17 Visual Resource Improvement

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitoy Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitoly)
- D8 Range Improvement - Structural (Permanent and Transitoly)

- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F3 Flow Timing Improvement

- G1 Minerals Management - Locatabies
- G2 Minerals Management - Locatable Withdrawals
- G5 Minerals Management. Saleables

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L6 Trail Construction/Reconstruction - Special Requirements
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management. Trails - Open

- P2 Fire Protection - High Country Non-Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Because of economic concerns regarding suitable access for timber management activities, manage timber on a regulated basis only on suitable areas within Section 13. Maintain visual quality at the partial retention level in Section 13 and at the retention level elsewhere within the MA. Mining operating plans, evaluations, and approval must maintain the desired access and visual quality objectives.

Consider burning decadent brush stands to produce younger, more available, and higher nutritional value forage, as well as reclaiming meadow areas from lodgepole pine encroachment to benefit deer and other species adapted to early-succession vegetation.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

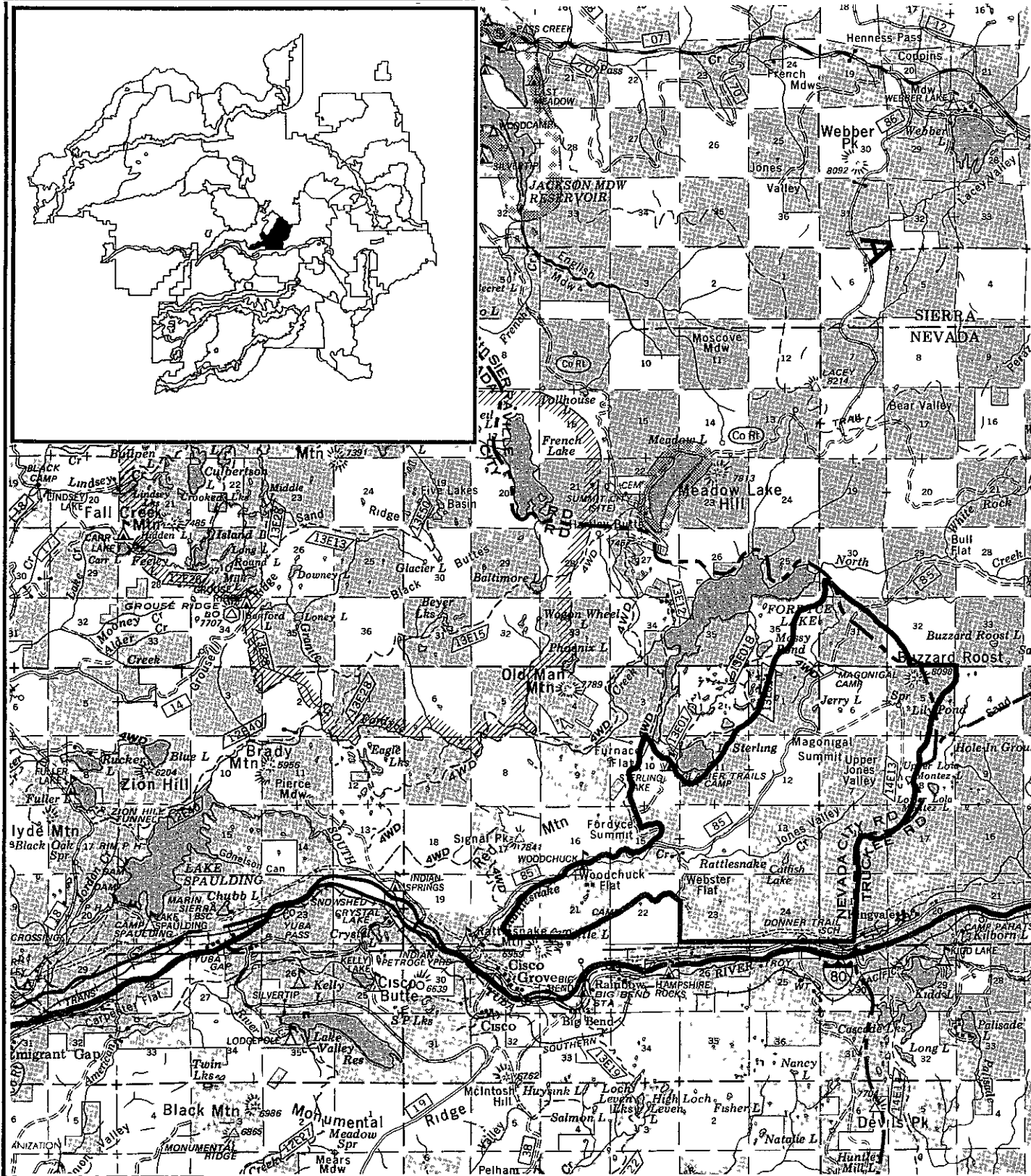
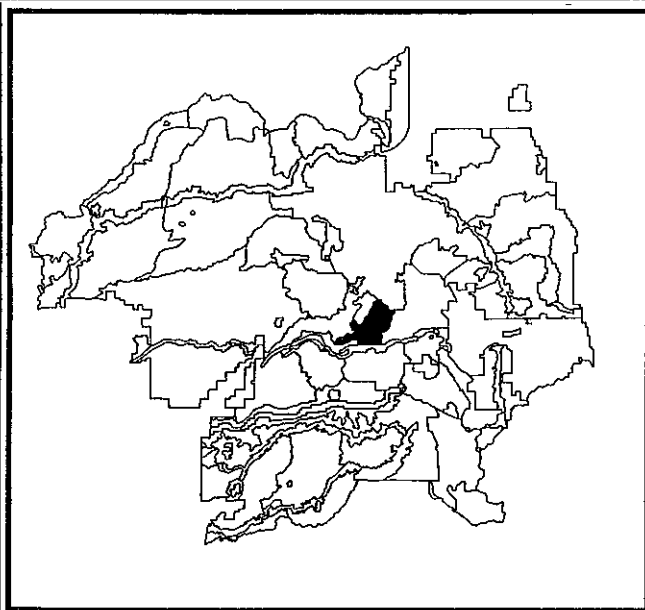
Evaluate mining operating plans for their effects on access to the area and their ability to meet visual quality objectives.

- 1/ Referto Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Referto complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 049

MAGONIGAL

T17N, R13E



049 MAGONIGAL

10,076 GROSS ACRES

4,271 NFS ACRES

I. DESCRIPTION

This management area (MA) is located north of the Interstate 80 corridor from Rattlesnake Creek and the Fordyce Lake Road on the west to the Nevada City and Truckee Ranger District boundaries between Upper and Lower Lola Montez Lakes on the east. The elevation ranges from a high point of 8,093 feet at Buzzard Roost to a low point of 5,800 feet where Rattlesnake Creek leaves the MA. The area is largely in private ownership, made up of many small landowners and a major timberland owner. The vegetative cover of the area is predominantly true fir, lodgepole pine, meadow types, and shrub areas. In general, the area has a south-facing aspect and shallow, rocky soils. Most of the timber is in small isolated pockets of soil, scattered in barren rock or poor soil areas. There are 448 acres of wetlands. There are 874 acres of unsuitable productive forest land.

The major access to the area is via the Rattlesnake Road (FS #85) from Cisco Grove. Dispersed recreation use of the area is fairly heavy with very high deer hunting use. Campgrounds and organization camps at Woodchuck Flat and Sterling Lake occur just outside the MA. Upper Lola Montez Lake is a recreation destination point. The area is open to OHV over-the-snow use, while over-land OHV travel is only permitted on designated routes. Winter recreational use of the area is significant. This consists primarily of snowmobile use with some cross-country skiing use. Generally high scenic quality exists within the area.

Much of the area is within the Rattlesnake Sheep Allotment. Check dams have been constructed in Magonigal Meadow for meadow restoration. Lodgepole pine encroachment has reduced the area within the meadows.

A major deer migration route exists from White Rock Lake through the western portion of the MA. The area contains key fawning habitat for deer. It also contains some high quality fisheries. Selected emphasis species for the MA are deer, bear, rainbow and brown trout, and the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is a concern for the visual resource along the routes from Cisco Grove to Sterling and Upper Lola Montez Lakes.

OHVs are causing excessive erosion, largely because they do not adhere to designated routes. There are opportunities to improve the management of OHV use.

There is a concern for artificial regeneration success in the true fir regions.

Rights-of-way easements require cooperation of many landowners.

Opportunities for wildlife habitat improvement include both shrub management and reduction of lodgepole pine encroachment, especially in key fawning habitat. This also will benefit livestock grazing.

The prevalence of lodgepole pine provides fuelwood opportunities.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize dispersed recreation, wildlife, and watershed values over most of the area.

Emphasize regulated even-age timber management where such activities do not conflict with recreation, wildlife, and watershed objectives.

Emphasize range management, taking advantage of transitory range opportunities created by timber harvest.

Unscheduled timber harvest may be practiced on lands unsuited for timber production.

Emphasize lodgepole pine management as part of the timber and wildlife management of the area to improve meadows.

Emphasize improvement of riparian vegetation, reclamation of meadows and wetlands, and development of a variety of age classes of shrubs on poorer sites and fields to improve wildlife habitat.

Emphasize ~~meeting~~ the visual quality of ~~partial retention~~.

This ~~MA~~ has an overall low fire potential: therefore, special fire management emphasis ~~is~~ to prevent fires during periods of high recreation use. Emphasize ~~fuels~~ treatment along travel ~~routes~~. Initial attack responses may be ~~modified~~ during periods of low or moderate fire danger.

The desired future ~~condition~~ is regulated stands of red fir, lodgepole pine, and high elevation mixed conifer where ~~true firs~~ are the major species. ~~Consists of even-aged plantations through large sawtimber size trees. Rotation ages for these stands will be 150+ years. The remaining high elevation mixed conifer stands will be managed on a short rotation basis. The remaining land within the management area will be similar to the present condition.~~

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - roaded natural except ~~semi-primitive~~ motomed in vicinity of upper Lola Montez Lake.
- B. Visual Quality Objective - ~~Parhal retention~~
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D. ~~Off-Highway~~ Vehicle Restrictions - Designated routes only. Open to over-the-snow travel
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic ~~Cross-Country~~ Skiing
- A4 Open OHV
- AS Restricted OHV
- A9 Recreation Management (Private & Other Public Sector)

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C3 Lake Fisheries - Nonstructural Improvement and Maintenance
- C4 Lake Fisheries - Structural Improvement and Maintenance
- C5 Early Succession ~~Vegetation~~ Management
- C6 Mid-succession Vegetation Management
- c7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D1 Range Management - Permanent Range Type (Extensive Management)
- D2 Range Management - Transitional Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitional)
- D8 Range Improvement - Structural (Permanent and Transitional)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 ~~Artificial~~ Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F3 Flow Timing Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G5 Minerals Management - Saleable

- J2 Land Adjustments - Limited
- L1 Timber Access Road Development- Road Construction/Reconstruction
- L2 Multiresource Road Access Development- Road Construction/Reconstruction
- L6 Trail Construction/Reconstruction - Special Requirements
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

- P2 Fire Protection - High Country Non-Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Emphasize shelterwood and natural regeneration practices to regenerate true fir. Design and implement an *O W* plan, including trail rerouting, to resolve the erosion problems associated with OHV use. Meet the visual quality objectives to achieve the necessary visual quality. Improve wildlife habitat by emphasizing meadow restoration and lodgepole management. Manage key shrub areas to provide a variety of age classes for wildlife.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitor and evaluate the effects of lodgepole management on meadow restoration.

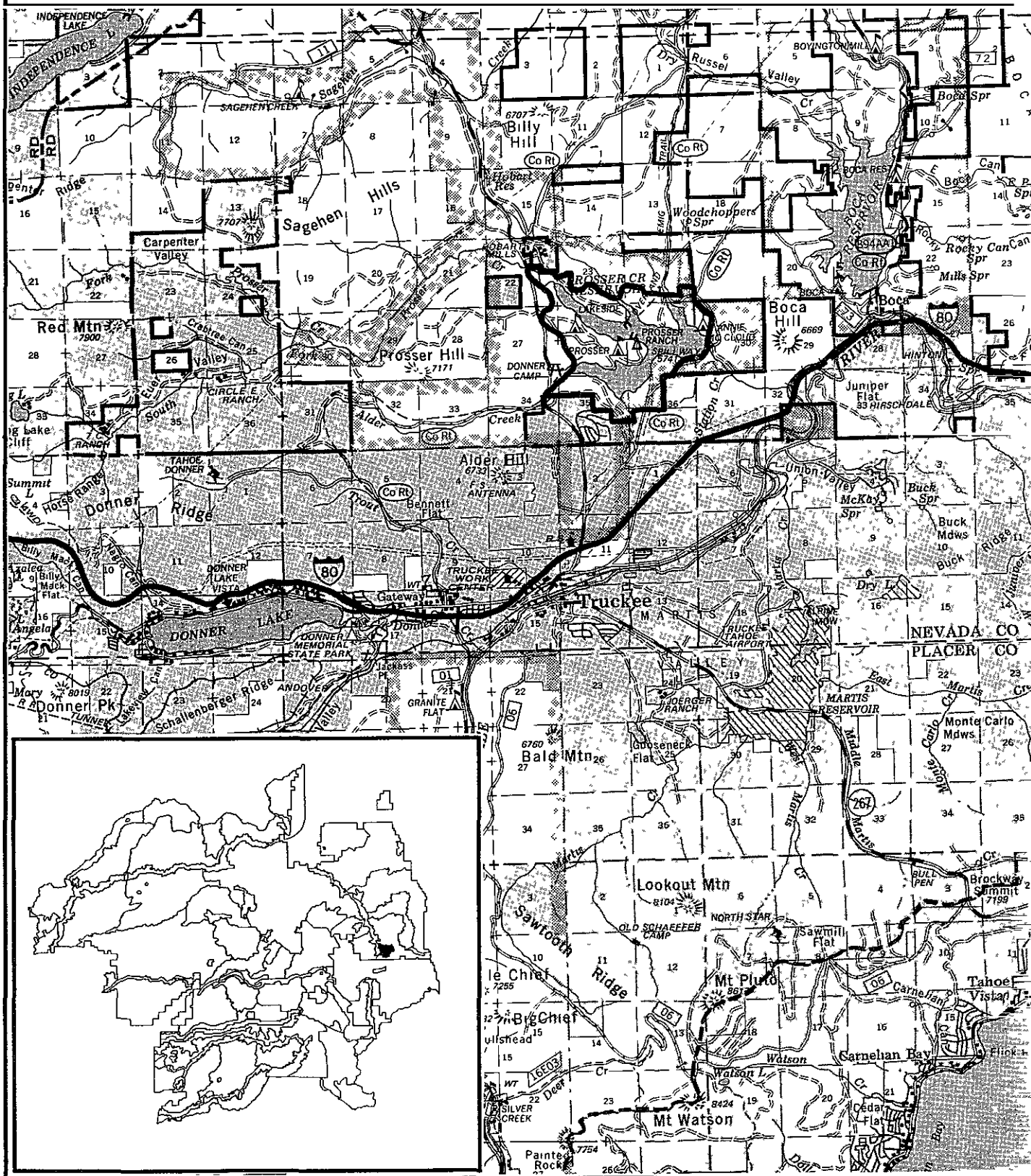
Monitor and evaluate *O W* trail rerouting

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 050

PROSSER RESERVOIR

T18N, R16E



050 PROSSER RESERVOIR

2,136 GROSS ACRES

2,136 NFS ACRES

I. DESCRIPTION

This management area (MA) surrounds and includes the Prosser Creek Reservoir, and extends approximately one-half mile up Prosser Creek and three-fourths of a mile up Alder Creek. There are two unimproved county roads in the area, and many Forest Service roads, both improved and unimproved. The elevation ranges from 5,741 feet at the spillway to 5,900 feet. Donner Camp National Register Site is located in one portion of the MA. The Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area.

The vegetation consists of lodgepole pine stands along the creek to the east side of pine and open sagebrush flats on the side slopes. There are 207 acres of wetlands. There are 2,136 acres of unsuitable timber land. There are three developed family campgrounds and one group campground, along with several inventoried potential recreation development sites. Several special-use permits exist within the area for a large pipeline, telephone cables, and power transmission lines. The land is part of the Boca Range Allotment.

Off-track Nordic skiing, snowmobiling, summer OHV activities, and year-round water-related recreation is popular in this management area.

Prosser Reservoir has a restricted boating speed limit of 15 mph.

Intensive watershed stabilization efforts are ongoing under agreement between the Bureau of Reclamation and the Forest Service.

The selected emphasis species are bald eagle, osprey, rainbow and brown trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The demands for recreation opportunities in this area are intense. Conflicts between user groups sometimes surface. There is a concern that off-highway vehicle use may cause soil disturbance.

Because of the flat terrain and open nature of the area, fishermen, fuelwood cutters, hunters, and recreationists with other interests generate a great deal of motorized travel both on and off highways. A large volume of roads and unclassified wheel tracks have resulted from this travel. A high rate of resource damage has occurred, primarily in early winter and spring. Impacts to wet meadows and rutting of roads commonly occur. If uncontrolled, continued resource damage is likely to continue.

Dispersed camping adjacent to Prosser Reservoir, which has caused resource damage, has resulted in restricting camping to developed sites and designated camping areas.

There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation management activities.

Protection of water quality is an important consideration to all land management activities in the unit.

Some residents living adjacent to National Forest System lands within this MA have expressed concern that Forest Service management activities would alter their 'green belt' that served as parks, visual screen, and open recreation areas for their neighborhood.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 89 and Interstate 80. These highways are included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation, and thus require special consideration to preserve the character of their scenic backdrops. There is also a focus on lands seen as foreground and middle ground from the reservoir and from adjacent subdivisions.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to develop and protect the recreation, watershed, cultural, and visual qualities. Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include this trail into the National Historic Trail System. The area is considered unsuitable for regulated timber production.

Permit summer OHV travel on designated routes only.

The desired future state is a balanced mix of recreation facilities to serve both motorized and non-motorized uses, both day-use and overnight use. The mix will include newly developed recreation sites and dispersed recreation areas adjacent to the lake. In the forested areas a continuous tree cover of uneven-aged healthy stands consisting of various age classes (0-200 years) will be maintained. The sagebrush areas will be used for intensive range management.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural in developed sites and roaded natural elsewhere
- B Visual Quality Objective - Retention in foreground as viewed from the reservoir, partial retention as seen from Highway 89 and I-80 and foreground as seen from subdivision, modification within the developed sites. The sites will, however, meet the partial retention VQO when viewed as middleground from major travel routes and other occupancy sites.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply. Nondesignated 'wheel tracks' should be closed and rehabilitated as soon as possible.
- D Off-Highway Vehicle Restrictions - Designated routes only, summer. Open over-the-snow.
- E Forestwide Standards and Guidelines - All apply except 24.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-County Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management. Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C3 Lake Fisheries - Nonstructural Improvement and Maintenance

- D1 Range Management - Permanent Range Type (Intensive Management)
- D4 Range Management - Transitory Range Type (Intensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- Da Range Improvement. Structural (Permanent and Transitory)

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L6 Trail Construction/Reconstruction - Special Requirements
- L6 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Trail Construction/Reconstruction - Foot Traffic Only

- Lt2 Transportation Management Trails - Open
- Lt3 Transportation Management, Trails. Restricted Use

P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Develop a recreation plan to resolve conflicts between user groups. Coordinate the use and future development of the off-highway vehicle open area with the State of California.

Develop and implement a road and wheel track management plan through cooperation with the California Department of Parks and Recreation's OHV program. Obliterate, stabilize, and revegetate surplus roads and wheel tracks that are not needed for administrative or public uses. Continue to stress resource protection through prevention, law enforcement, and public education. Restrict summer motorized travel to designated routes only. Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in "The Overland Emigrant Trail Through The Tahoe National Forest" until more refined evidence is disclosed.

Continue to restrict camping to developed sites and designated camping areas.

Continue to pursue watershed protection and watershed stabilization.

The retention VQO established ensures that scenic quality is maintained.

It is the responsibility of developers, in consultation with county planning agencies, to provide for 'greenbelts' and parks for communities. It is not a Forest Service responsibility to provide subdivision amenities. However, the Forest Service will continue to analyze the effects of off-site impacts on adjacent lands during project-level planning.

VII. SPECIFIC MONITORING AND EVALUATION

Mandatory monitoring should be written into any project proposal involving activities in the potential National Register site.

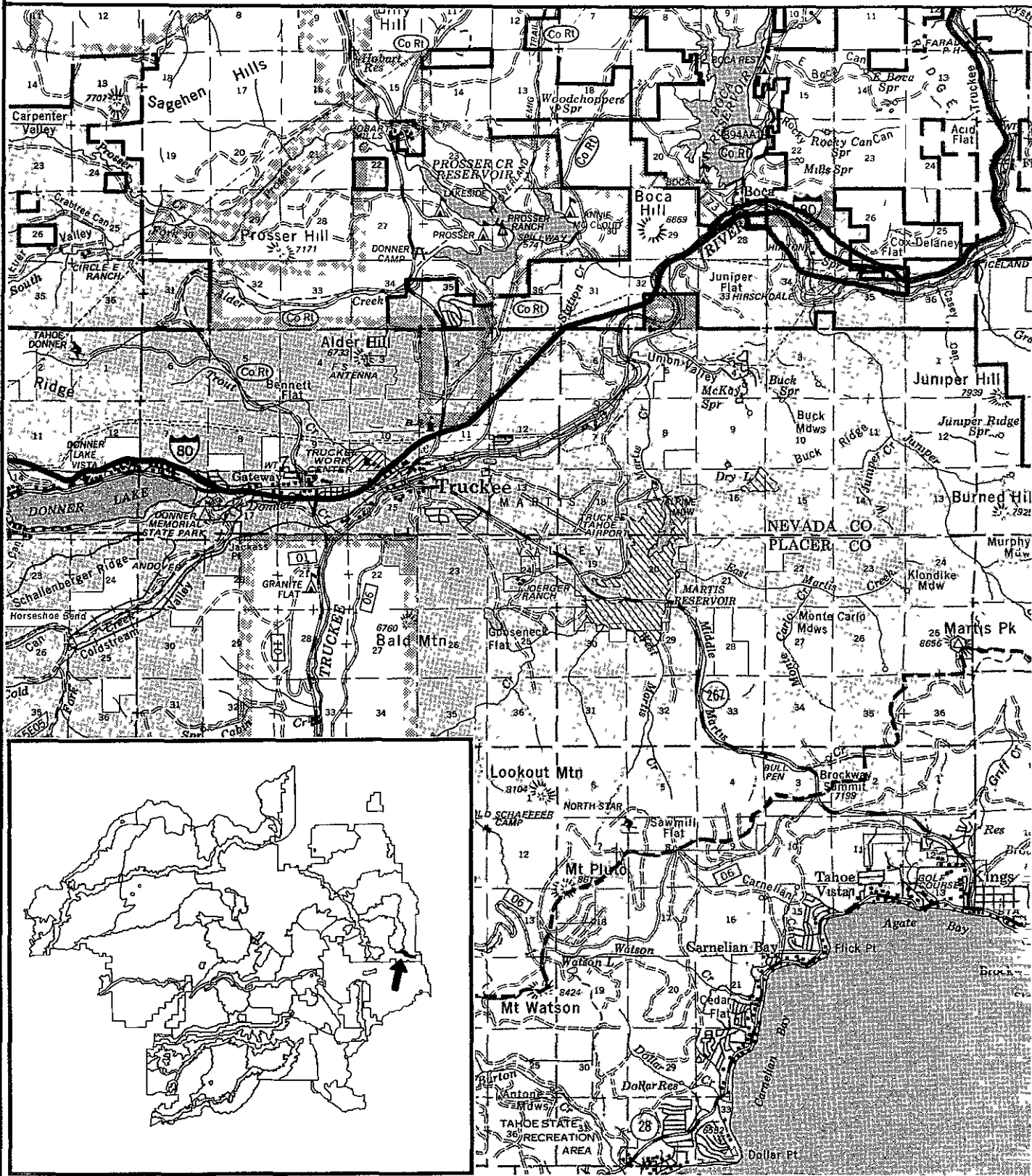
Monitor County zoning and land use regulations for coordination of County and Forest land management objectives.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 051

HIRSCHDALE

T17N, R17E



051 HIRSCHDALE

152 GROSS ACRES

152 NFS ACRES

I. DESCRIPTION

This management area (MA) is within the Truckee River watershed and is located along Interstate Highway 80 from Boca to Cox Delaney Flat. The elevation varies from 5,400 feet on the river canyon floor to 5,800 feet at the canyon rim. The aspect is generally north and south along the river canyon. The terrain varies from steep canyon walls to small flats. The southern end of the Boca Range Allotment is in the western part of this MA.

The Freeway Fire (1977) burned a portion of the northwest end of the unit, resulting in a dramatic vegetation change.

The predominant vegetation is open eastside pine with an understory of perennial grasses and forbs that are accentuated by patches of sage and bitterbrush. Wetland acreage is minor. The area is rocky with volcanic rock outcroppings common throughout the area. There are 22 acres of unsuitable productive timber land.

The historic townsite of Boca, located just north of Interstate 80, is being considered for nomination to the National Register of Historic Places. Also within the area are prehistoric cultural sites.

Existing uses within this area are power lines, telephone lines, a railroad right-of-way, a County Road, and the I-80 corridor.

The selected emphasis species are rainbow and brown trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Maintenance of visual quality is an issue due to high visibility and heavy use of I-80 and the access to Boca and Stampede Reservoirs. I-80 is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation, and thus requires special consideration to preserve the character of its scenic backdrop.

There is a concern that the water quality of the Truckee River should be maintained or improved.

There is a concern over the potential for spills of hazardous substances along I-80 and the railroad.

There is a concern that recreation use and developments, as well as transportation developments, may damage historic or prehistoric sites.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize the protection of historic and prehistoric sites while considering their interpretation for the public. Complete the analysis for nomination of the Boca townsite to the National Register of Historic Places. Place utilities within this MA whenever possible to keep other lands from being impacted by these uses. As much as possible, utilities will be designed to blend with the natural surroundings to maintain the scenic backdrop of I-80. This MA is unsuited for regulated timber management.

Wild and Scenic river values will be protected until such time as eligibility study and suitability study, if required, are completed for the Truckee River. The River is potentially eligible for a 'scenic' or 'recreation' classification.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

A Recreation Opportunity Spectrum - Rural.

B Visual Quality Objective - Partial retention. For some facilities to meet this objective could require significant visual mitigation and project-level involvement of the Forest landscape architect. Where proposed installations are in visually prominent locations, maximum practical mitigation will be implemented even to fulfill this requirement as much as possible.

Many established utility structures do not currently comply with this VQO. Where feasible, mitigation will be applied to these existing facilities to bring them into compliance with partial retention.

- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions- Designated routes only, summer Open, over-the-snow.
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted O W
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- D1 Range Management - Permanent Range Type (Intensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- G1 Minerals Management - Locatable
- G3 Minerals Management - Leasable

- J2 Land Adjustments - Limited

- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L6 Trail Construction/Reconstruction - Special Uses

- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection - Visual, High Use, Reservoirs, Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Design all new utilities to minimize visual impacts and to maintain water quality.

Consider the development of an interpretive plan/program to educate the public on the history of the area, as well as, on the value of preserving the rich local historic and prehistoric sites. Include the historic Boca townsite in the Boca Reservoir Master Planning efforts. (See MA 032)

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

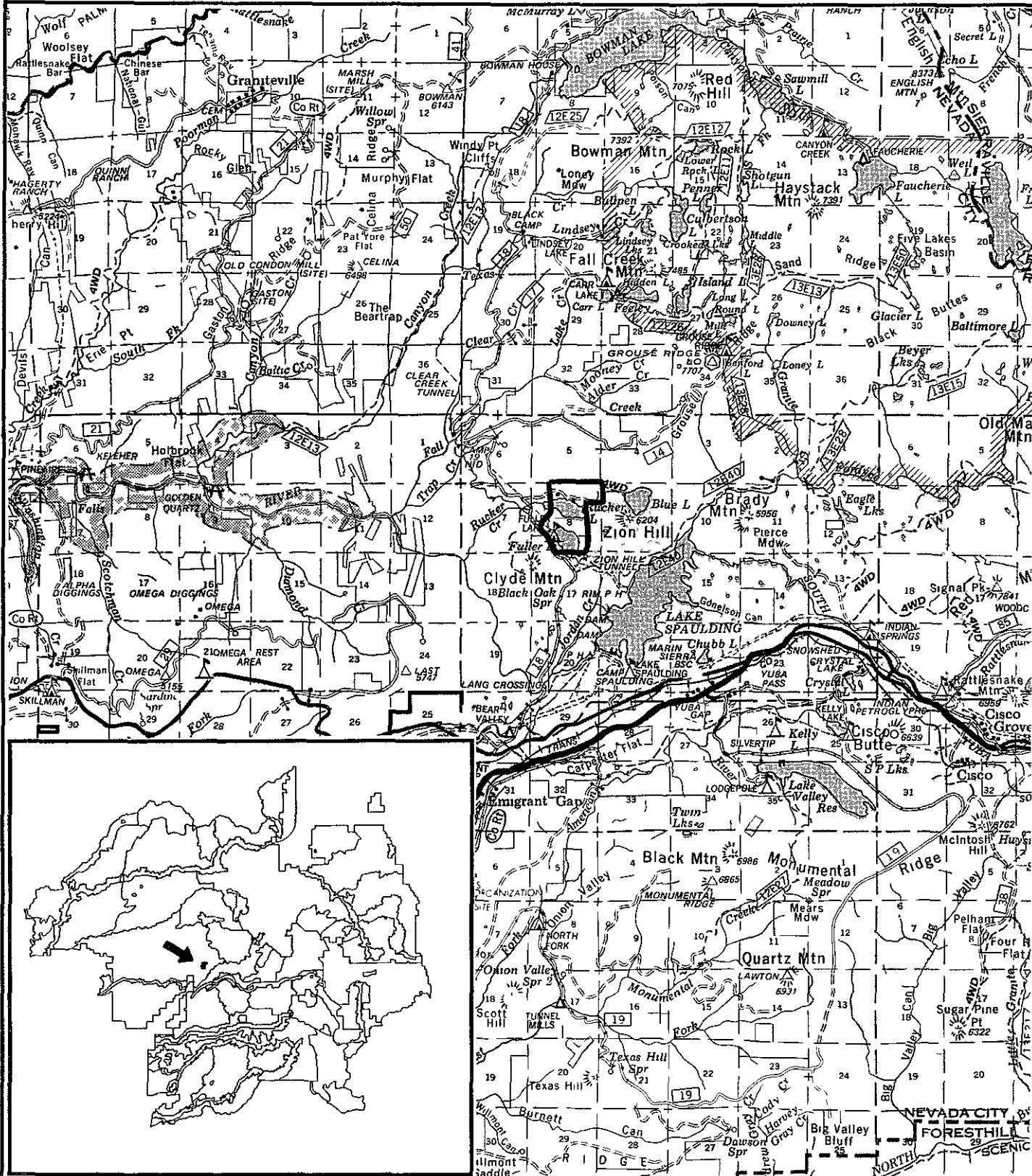
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 052

FULLER

T17N, R12E



052 FULLER

274 GROSS ACRES

274 NFS ACRES

I. DESCRIPTION

This management area (MA) includes Fuller and Rucker Lakes and the surrounding lands. The Vegetation consists primarily of mixed conifer forest. The elevations of the lakes are 5,343 feet for Fuller and 5,462 feet for Rucker Lake. Blue Lake, on PG&E land, lies about one-half mile east of the MA. There are 11 acres of wetlands and 208 acres of unsuitable productive forest land.

Private land within the area is owned by Pacific Gas and Electric and numerous owners of small parcels.

Excellent access to the area is provided by the Bowman Road from Highway 20. A small Forest Service campground is maintained at Fuller Lake. Dispersed recreation use is very heavy around Fuller Lake, and there are no sanitary facilities near the dam. Unauthorized overflow camping on PG&E and adjacent private land near the dam and alongside the Bowman Road occurs on high-use weekends. The Sportsman Club Lodge on Fuller Lake (private property) is adjacent to Fuller Lake Campground. Fuller Lake receives heavy fishing pressure. An organization camp is maintained on National Forest System land at Rucker Lake under special-use permit. There is some dispersed recreation around Rucker Lake, however, use is not nearly as heavy as at Fuller Lake. Rucker Lake does not receive heavy fishing pressure because of the presence of less preferred fish (sunfish).

The selected emphasis species are rainbow and brown trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The area is heavily used for camping, dispersed recreation, and fishing. The existing developed campground at Fuller Lake does not provide adequate campsites, sanitary facilities, water, or parking for the heavy use that the area receives. Because of the heavy use, soil and vegetation are being lost.

The developed organization camp at Rucker Lake precludes use of that lakeshore area by the general public. However, there is undeveloped public access to Rucker Lake adjacent to the organization camp, and general public use of the area is increasing.

Overuse of the area between the Bowman Road and Fuller Lake may result in additional site degradation. The long-term result will be loss of timber cover, loss of soil, and an adverse effect on water and visual quality.

Opportunities include improving the recreation experience at Fuller Lake, developing recreation facilities on PG&E lands, and improving the fishing at Rucker Lake.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphases for this area are water-oriented developed recreation, maintenance of visual quality, and protection of water quality on National Forest System lands. Emphasize management of a quality fishery. Manage vegetation to preserve as many large trees as possible, especially along the lakeshores. Soil protection, adequate sanitation, and maintenance of healthy vegetation are objectives in all recreation site maintenance, reconstruction, and rehabilitation work. The MA is unsuitable for regulated timber management.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

A Recreation Opportunity Spectrum - Rural

6 Visual Quality Objective - Retention in foreground as viewed from reservoir. Partial retention within the developed sites. The sites will, however, meet the retention VQO when viewed as middleground from travel routes and the lakes. Partial retention for remainder of area.

- C Transportation Management Policy- Forestwide Standards and Guidelines apply
- D Mf-Highway Vehicle Restrictions- Designated routes only, open to over-the-snow travel
- E Forestwide Standards and Guidelines- All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 OpenOHV
- A5 RestrictedOHV
- A8 Developed Recreation & Interpretive Service Sites Management Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- G1 Minerals Management- Locatables
- G2 Minerals Management. Locatable Withdrawals

- J2 Land Adjustments - Limited

- L2** Multiresource Road Access Development- Road **Construction/Reconstruction**
- L8 Transportation Management, Roads. Open
- L9 Transportation Management, Roads- Regulated Use
- L10 Transportation Management, Roads- Closed
- L11 Transportation Management, Roads- Obliterated

- P5** Fire Protection -Visual, High Use, Reservoirs, Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Coordinate with Pacific Gas and Electric for developing recreation facilities on their land. The purpose is to locate adequate sites to meet recreation demands. Consider acquisition of lakeshore. As soon as possible, rehabilitate the Fuller Lake Campground to provide for more toilet facilities, protect threatened soil and vegetation, provide adequate parking, and maintain a healthy, natural appearing forest cover.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

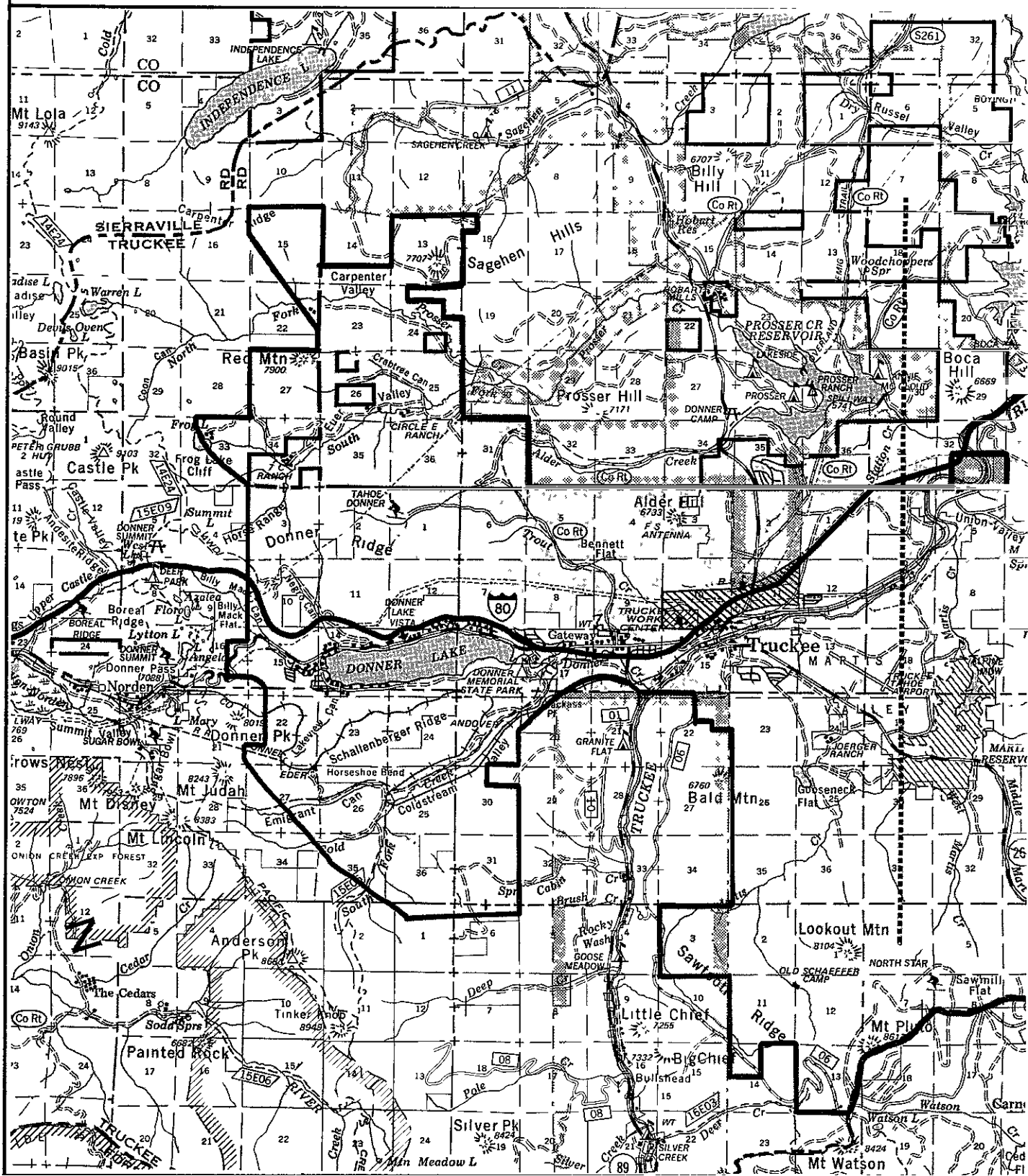
Evaluate the suitability and feasibility of developing additional camping facilities on the north side of Rucker Lake while continuing the use of the organization camp.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 053

DONNER

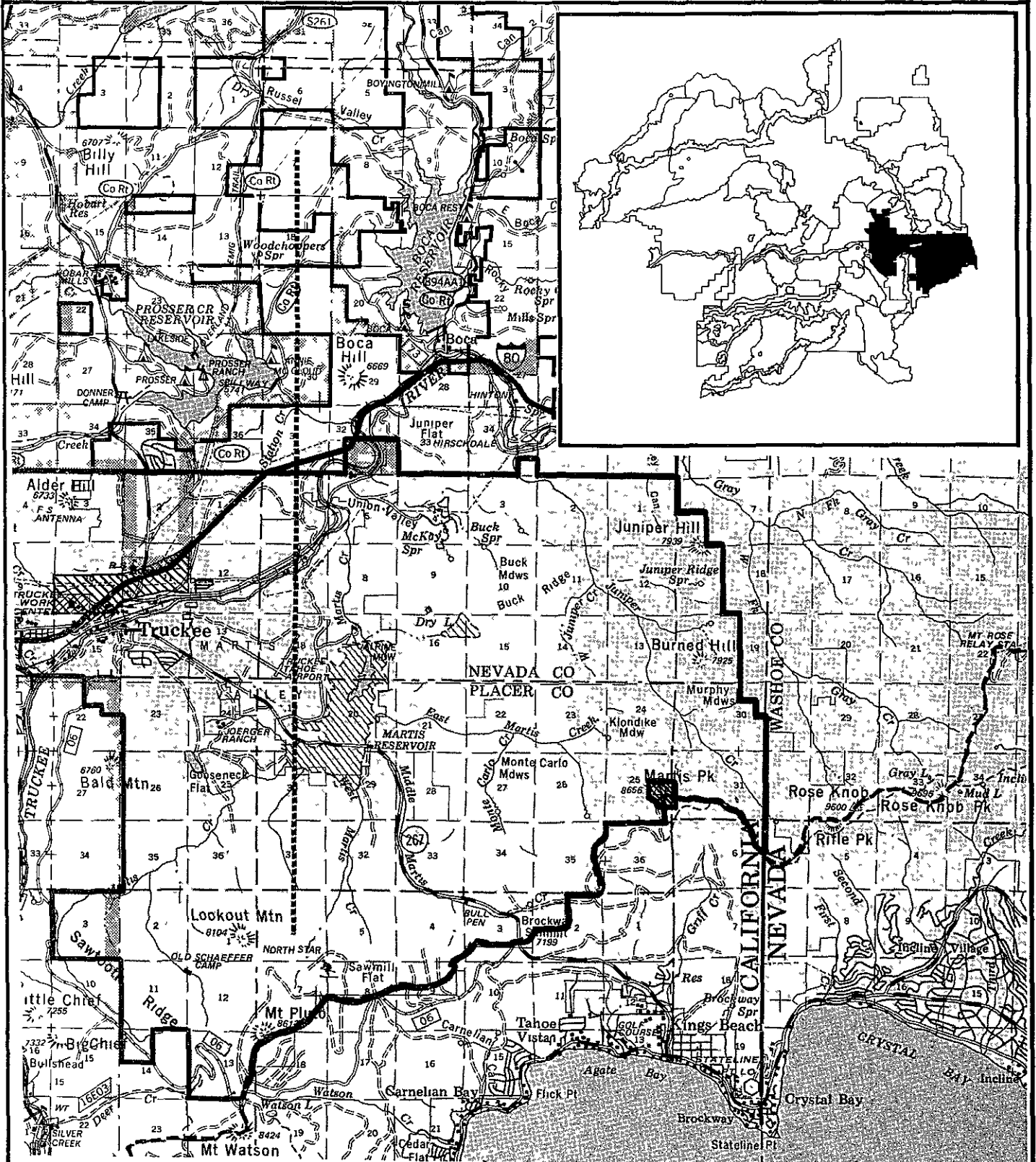
T17N, R17E



MANAGEMENT AREA 053

DONNER

T17N, R17E



053 DONNER

59,160 GROSS ACRES

3,068 NFS ACRES

I. DESCRIPTION

This management area (MA) contains isolated National Forest System parcels located mostly in the Martis Valley and Donner Lake areas. Most of these parcels are widely separated from other National Forest System lands, creating management and access difficulties. These parcels are generally near commercial or residential developments that are encumbered by permits and easements that serve the developments. There is occasional unauthorized occupancy which is difficult to prevent because of the large amount of property boundary associated with these isolated parcels and the large number of adjacent private landowners. Nevada County has scenic zoning restrictions on private land along Highway 89, which is accepted by most of the local residents.

The elevation varies from 5,800 feet in Martis Valley to 7,800 on Donner Summit. The vegetation consists of eastside pine and open sagebrush flats in Martis Valley to mixed conifer and red fir stands on Donner Summit. There are 168 acres of wetlands. There are 2,193 acres of unsuitable productive forest land. Portions of the Sierra Crest, Summit, and Boca Range Allotments are in the northeast corner of the area. Some of the parcels are known to contain cultural resources with unknown significance. The Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area.

Areas in the Cold Creek drainage have been proposed for winter sports development. This includes some National Forest System land in Coldstream Valley for base facilities.

There are no selected emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Since Interstate 80 has the highest volume of traffic of any highway entering California, except the California-Mexico border, an opportunity exists to provide the visiting public with information about the National Forest System and its management. I-80 is also a major travel route for visitors from the Bay Area and the Central Valley to the northern California National Forests and Lake Tahoe. This would provide additional information opportunities, as well as opportunities to cooperate with other public service groups to provide similar information.

Possible development of winter sports facilities in Coldstream Valley is an issue.

Dispersed camping along the Truckee River in Section 5, T 17N, R 17E, for years has caused resource damage and has resulted in restricting camping to designated campgrounds only. All available campgrounds are located in other management areas.

There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation management activities.

Some residents living adjacent to National Forest System lands within this MA have expressed concern that Forest Service management activities would alter their 'green belt' that served as parks, visual screen, and open recreation areas for their neighborhood.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middleground from Interstate 80 and State Highways 89 and 267. These highways are included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus require special consideration to preserve the character of their scenic backdrops.

There is an opportunity for the Forest Service to exchange the isolated and encumbered lands that are difficult to administer and to acquire lands more suitable for National Forest management purposes. There is an opportunity to exchange some of these lands for undeveloped private lands with higher public value.

11. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to manage these lands to maintain or enhance value for land exchange purposes

Emphasize the development of a Regional Visitor Information center to provide information to the traveling public about the National Forest System in California

This MA is unsuited for regulated timber production. Make no investments in wildlife habitat improvement due to impending transfer of the lands to other ownerships. Inventory cultural resources on these parcels. Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include this trail into the National Historic Trail System.

Wild and Scenic river values will be protected until such time as eligibility study and suitability study, if required, are completed for the Truckee River. The River is potentially eligible for a "scenic" or 'recreation' classification.

Another management goal is to maintain the scenic quality of the area as seen from I-80.

The desired future state is to maintain the health and vigor of the timber stands to protect their value for exchange purposes.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Rural or roaded natural. See element map for detail.
- B. Visual Quality Objective - Retention
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply
- D. Off-Highway Vehicle Restrictions - Open
- E. Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A4 Open OHV
- A17 Visual Resource Improvement
- D2 Range Management - Permanent Range Type (Extensive Management)
- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- J3 Land Adjustments - Potential Exchange
- L8 Transportation Management, Roads - Open
- W Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use
- P5 Fire Protection - Visual, High Use, Reservoirs, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Consider locating a Regional National Forest public information center in this management area to provide information about the National Forest System to the large volume of traveling public who pass the area on Interstate 80.

Placer and Nevada Counties both have scenic zoning restrictions along Highway 89 that are satisfactory to the majority of residents within the Counties. Once these lands are exchanged into private ownership they will fall under those zoning restrictions and the scenic quality would be adequately maintained.

Continue to prohibit camping

Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in 'The Overland Emigrant Trail Through the Tahoe National Forest' until more refined evidence is disclosed

It is the responsibility of developers in consultation with county planning agencies to provide for "greenbelts" and parks for communities. It is not a Forest Service responsibility to provide subdivision amenities. However, the Forest Service will continue to analyze the effects of off-site impacts on adjacent lands during project-level planning.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

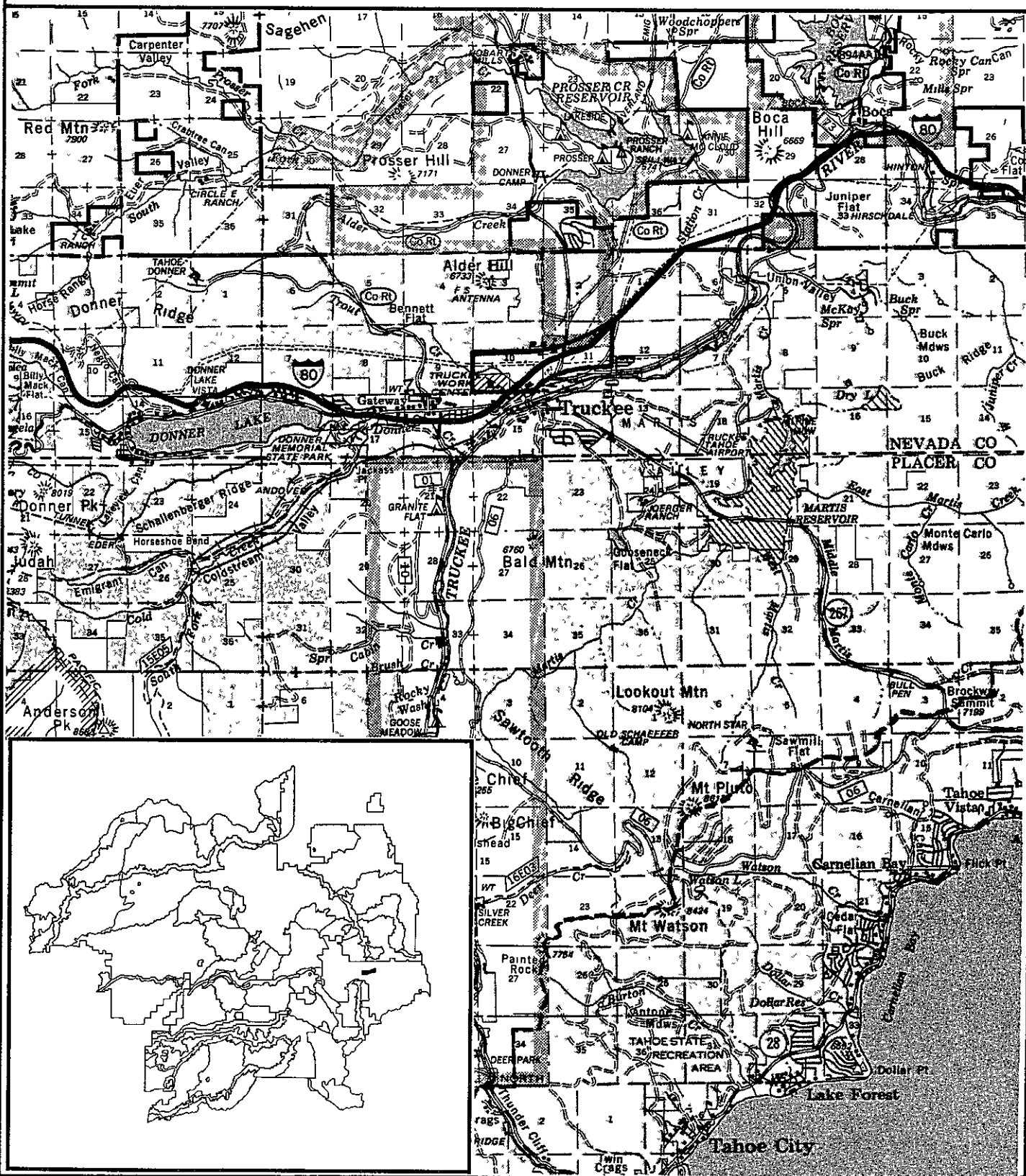
Monitor County zoning and land use regulations for coordination of County and Forest land management objectives

- 1/ Refer to Resource Support Element **Maps and Forestwide Standards and Guidelines**.
- 2/ Refer to complete Descriptions of **Best Management Practices in Chapter 1**

MANAGEMENT AREA 054

TRUCKEE

T17N, R16E



054 TRUCKEE

537 GROSS ACRES

256 NFS ACRES

I. DESCRIPTION

This management area (MA) is north of the town of Truckee, at the intersection of Interstate 80 and State Highway 89. The elevation varies from 5,700 feet to 6,240 feet within the area. Features include the Tahoe National Forest Truckee Work Center, Interstate Highway 80, State Highways 89 and 267, and a high-voltage electrical transmission line. The existing Truckee Ranger District Office is located on private land adjacent to this area.

The State Highway Commission has been considering the realignment of State Highway 267 as a bypass of traffic-clogged, downtown Truckee for several years, which would affect this MA. As of this printing, the overall project proposal remains unresolved. This project has a high priority for Nevada County and Truckee.

The vegetation consists primarily of an eastside mixed conifer type with Jeffrey pine as the dominant species. The area is accessed by State, county, and Forest Service roads. Several small drainages flow through the management area and eventually reach the Truckee River. There are 11 acres of wetlands. There are 227 acres of unsuitable productive forest land.

The Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this Management Area.

There are no emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is a concern about coordination with Nevada County and the relationship between National Forest direction, County zoning, and coordination of land use.

Because Interstate 80 has the highest volume of traffic entering California of any State highway, an opportunity exists to provide the visiting public with information about the National Forests and their management. I-80 is also a major travel route for visitors from the Bay Area and the Central Valley to the northern California National Forests and Lake Tahoe. This would provide additional information opportunities, as well as cooperating with other public service groups to provide similar public information.

An opportunity exists to improve the Truckee District facilities to better accommodate resource management administration. There is a potential for a more flexible and efficient District administrative site that will better provide for public services.

Dispersed camping, which has caused resource damage, has resulted in prohibiting camping.

There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation and non-recreation management activities.

Visual quality management is a concern. This concern focuses on lands seen from Interstate 80 and State Highways 89 and 267. These highways are included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus require special consideration to preserve the character of their scenic backdrops.

There is an opportunity for a realignment of State Highway 267 through this management area. It is scheduled at the earliest in 1990, although a final decision has not been made.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize the development of facilities that will provide better public service or efficiency of operation. Emphasize the development of a regional visitor information center to provide information to the traveling public about northern California National Forests.

Manage the existing administrative facilities and analyze potential development. These lands are unsuited for regulated timber production.

Any proposed facility development design will integrate natural scenic qualities and spatial designs consistent with visual management objectives.

Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include this trail into the National Historic Trail System.

Acquire the leased Ranger District office, if it is prudent to do so, and if it is in the interest of improved public service and efficiency of operation.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural
- B. Visual Quality Objective - Partial retention, as viewed from the major Highways and nearby subdivisions that look into the site.
- C Transportation Management Policy - Roads within administrative sites will be paved surface with restricted public traffic
- D Off-highway Vehicle Restrictions - Closed, in developed administrative sites. Designated routes only, remainder.
- E. Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-County Skiing
- AS Restricted OHV
- A6 Closed OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J2 Land Adjustments - Limited

- L2 Multiresource Road Access Development. Road Construction/Reconstruction
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management. Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management. Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P3 Fire Protection. Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Complete site studies and develop appropriate facilities

Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in 'The Overland Emigrant Trail Through The Tahoe National Forest' until more refined evidence is disclosed

Coordinate with the State in carrying out environmental studies for the realignment of Highway 267, and with Nevada County in land use regulation

Continue to prohibit camping

The Partial Retention VCO is established to assure management activities are integrated with the natural landscapes

VII. SPECIFIC MONITORING AND EVALUATION

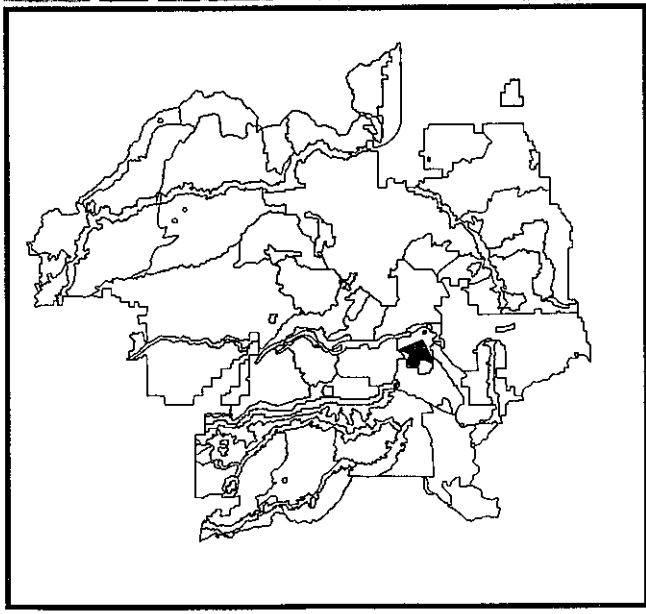
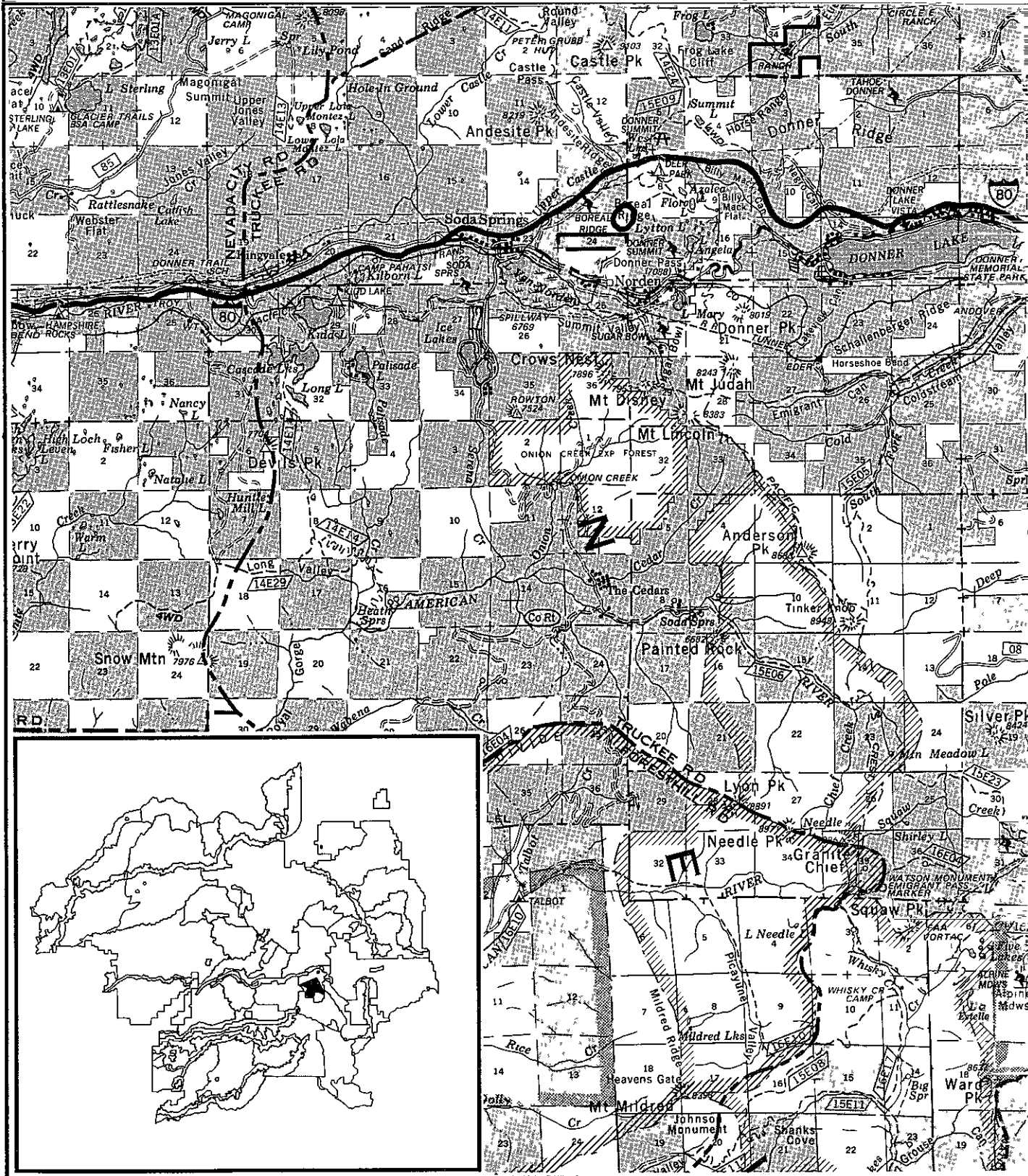
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 055

BOREAL RIDGE

T17N, R15E



055 BOREAL RIDGE

10 GROSS ACRES

10 NFS ACRES

I. DESCRIPTION

This management area (MA) is located near Donner Summit on the south side of Interstate 80 at the east end of Boreal Ridge Ski Area at an elevation of 7,700 feet. The site is rocky with sparse vegetation.

The area was first occupied in 1967 by a cable television 'head-end' rig (antenna and amplifying system) that remains to be the only permit on the site.

The permit provides cable television service to the community of Truckee and the Donner Summit area. There is electrical and telephone service to the site and access is provided by a private road through the Boreal Ridge Ski Area. Winter access is by over-the-snow vehicle or ski lift. Improvements on the site include a 10'x20' single level concrete structure with two 40-foot towers and buried television cable.

There are no wetlands. There are 10 acres of unsuitable productive forest land.

There are no selected emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is an opportunity to concentrate compatible electronic uses at this and other approved electronic sites. The permittee has proposed expanding and upgrading his facilities to increase the quality of television reception. This proposal may conflict with expansion of Boreal Ridge Ski Area.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is use as an electronic site.

The MA is unsuited for regulated timber production.

The desired future state is an electronic site with an approved site plan.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Rural
- B. Visual Quality Objective - Modification This VQO allows management activities to dominate the characteristic landscape, however, structures and roads should meet partial retention, that is remain visually subordinate when viewed as middle ground and background. To meet these requirements will, in some cases, require significant efforts at visual mitigation and project-level involvement of the Forest landscape architect. Some areas, however, might require very little mitigation to satisfy the modification objective. Where proposed installations in this latter category are in a visually prominent location, maximum practical mitigation will still be implemented even if the resultant visual quality will exceed the objective. In other words, the modification VQO will be applied as the base level or minimum acceptable visual quality.
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply
- D. Off-Highway Vehicle Restrictions - Closed
- E. Forestwide Standards and Guidelines - All apply
- F. Other - Develop an electronic site plan

V. AVAILIABLE MANAGEMENT PRACTICES 21

- A6 Closed OHV
- A10 Downhill Ski

- Gt Minerals Management • Locatables
- G3 Minerals Management • Leasables

- J2 Land Adjustments • Limited

- P3 Fire Protection • Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The electronic site plan provides guidelines and direction for management and use of the area. Revise and update this plan for new development as needed. The Forest Service and the Federal Communications Commission will evaluate all new applications for compatibility with existing uses. Incompatible frequencies will be denied, give preference to existing uses.

Require permits to minimize the visual impact of facilities.

A site plan that includes proposed improvements at the electronic site needs to be developed and compared with expansion plans of Boreal Ridge Ski Area.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

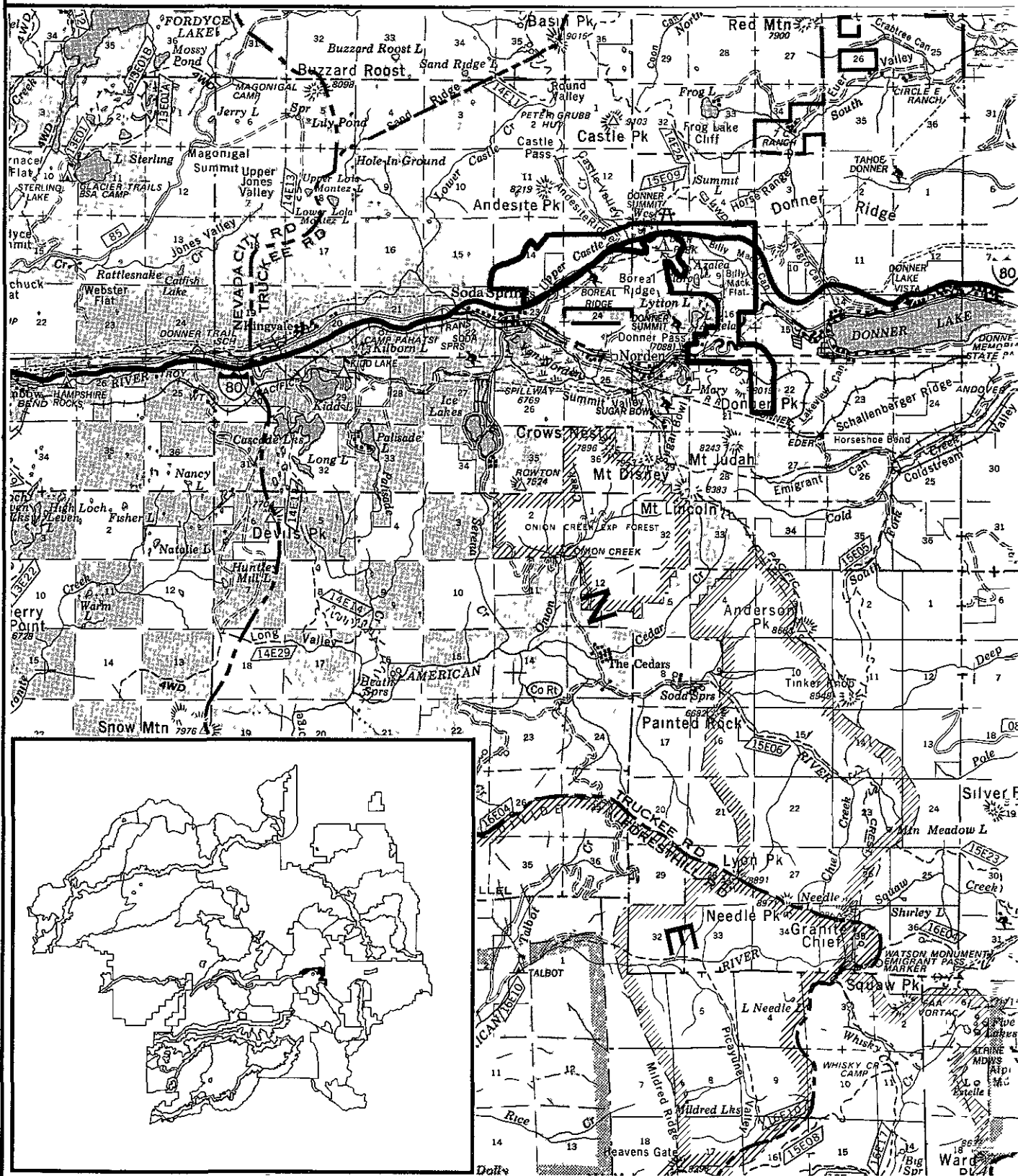
None.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 056

DONNER PASS

T17N, R15E



056 DONNER PASS

2,275 GROSS ACRES

1,070 NFS ACRES

I. DESCRIPTION

This management area (MA) is a narrow strip of land along the crest of the Sierra Nevada Mountains providing a scenic backdrop for Interstate Highway 80 at Donner Summit. The elevation ranges between 6,600 and 7,700 feet. The terrain is extremely rugged and broken with extensive rock outcroppings and considerable visual variety.

A portion of this MA falls within the Summit Grazing Allotment.

A portion of the area is a critical domestic watershed supplying the water for the Donner Summit communities. Portions have, or soon will be, intensively developed for recreation (Interstate 80 roadside rest and Pacific Crest Trailhead). The area also contains a potential dispersed winter sports staging area for the Castle Peak area to the north of I-80. The Pacific Crest Trail traverses this area.

The limiting factor for dispersed recreation use in the Castle Peak area is parking, which currently occurs within this MA, adjacent to I-80, along the frontage road at Boreal Ridge ski area. This parking is currently managed by the California Snow Park Program under permit from Boreal Ridge ski area. There have been conflicts in the past when recreationists have attempted to use the I-80 roadside rest stops where such use is prohibited.

The selected emphasis species are rainbow trout and the meadow and riparian groups. There are 83 acres of wetlands and 846 acres of unsuitable productive forest land.

An important National Register Site exists along old State Highway 40, this is one of the major petroglyph sites in this region. Also, the Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area.

Several outfitter/guide special-use permits have been issued for climbing rock faces adjacent to old Highway 40.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Maintenance of a quality watershed and scenic landscape are important concerns in this area. The landscape management concern focuses on lands seen from Interstate 80. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation management activities.

The opportunity exists to develop a cross-country ski track system in conjunction with private property developments.

Some residents living adjacent to National Forest System lands within this management area have expressed concern that Forest Service management activities may alter their 'green belt' that has served as parks, visual screen, or open recreation areas for their neighborhood.

111. RESOURCE MANAGEMENT EMPHASIS

Maintain the quality of the scenic and watershed values while enhancing dispersed recreation values. The area is unsuited for regulated timber production. This will result in a near-natural forest setting. Continue grazing in this MA.

Do not allow commercial or competitive event use of the PCT Trailhead.

Emphasize planning for non-commercial Nordic skiing development. Give priority to developments to be used for training purposes.

Continue to work with State and local agencies to develop solutions to meet public parking needs for dispersed recreation.

The desired future condition is tree cover wherever adaptable.

Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include this trail into the National Historic Trail System.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum- Rural and roaded natural per the initial inventory.
- B Visual Quality Objective- Retention, except partial retention for developed sites and concentrated use areas along Interstate 80
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Mf-Highway Vehicle Restrictions. Designated routes only, except open over-the-snow, in Section 14, north of Soda Springs
- E Forestwide Standards and Guidelines- All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- AB Developed Recreation & Interpretive Service Sites Management Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement. Structural (Permanent and Transitory)

- G1 Minerals Management - Localities
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L2 Multiresource Road Access Development- Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction- Foot & Equestrian Traffic Only
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads. Closed
- L11 Transportation Management, Roads - Obliterated
- L13 Transportation Management, Trails - Restricted Use
- L14 Pacific Crest National Scenic Trail Management

- P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Fully recognize and consider the watershed, scenic, and cultural resources in all projects during environmental analysis through the planning period

Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in "The Overland Emigrant Trail Through The Tahoe National Forest" until more refined evidence is disclosed.

Propose withdrawal from mineral entry and leasing for **400 feet** from each side of I-80.

Address ~~site-specific~~ issues related to the development of non-commercial ~~cross-country~~ ski developments in site-specific, project-level environmental analysis

It is ~~the~~ responsibility of developers, in consultation with county planning agencies, to provide for "greenbelts" and parks for communities. It is not a Forest Service responsibility to provide subdivision amenities. However, the Forest Service will continue to analyze the effects of ~~off-site~~ impacts on ~~adjacent~~ lands during project-level planning.

VII. SPECIFIC MONITORING AND EVALUATION

Any project affecting or adjacent to ~~the~~ National Register ~~Site~~ along old State Highway 40 shall have a specific monitoring plan included as a part of the project proposal and approval

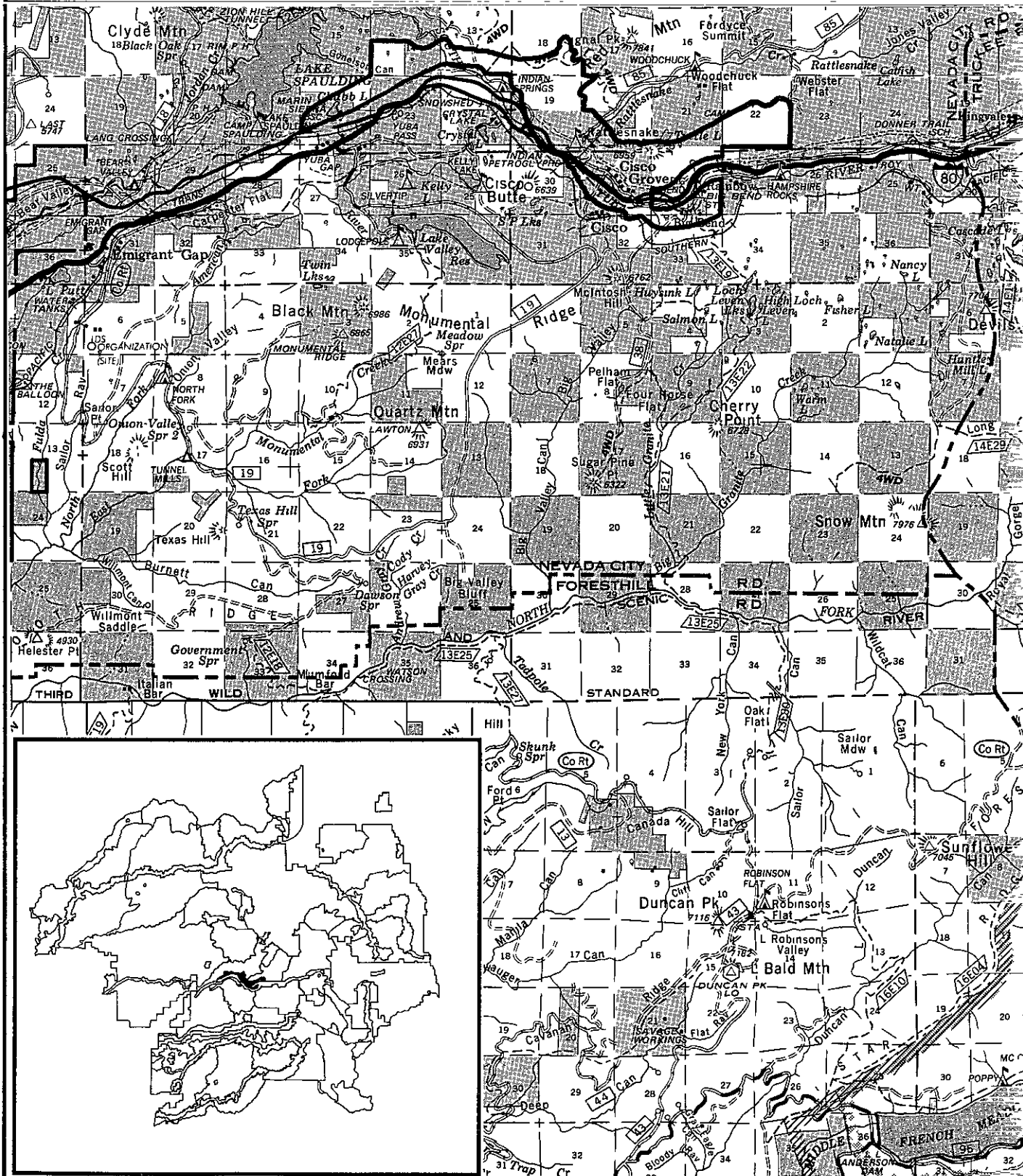
Monitor County zoning and land use regulations for coordination of County and Forest land management objectives

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 057

SPAULDING

T17N, R13E



057 SPAULDING

3,363 GROSS ACRES

1,781 NET ACRES

I. DESCRIPTION

This management area (MA) includes part of the Highway 20 and Interstate 80 corridors, as seen from Yuba Gap to Kingvale. Lands viewed are foreground and middle ground areas, generally within one to one and one-half miles of Interstate 80.

The land varies from dense patches of timber, to scattered timber and brush, to rocky, nearly barren mountain slopes. There are 136 acres of wetlands. There are 1,476 acres of unsuitable productive forest land. The area is considered unsuitable for regulated timber production.

There is little vehicle access through this MA except on and adjacent to the highways.

The area includes high value summer deer range and fawning habitat.

The Big Bend Station and Visitor Center are within this area. The Visitor Center provides an important source of information for users of the central portion of the Tahoe National Forest. The Loch Leven Trail parking area and a portion of the trail are found in this area. The trail receives very heavy hiking use and is closed to motor vehicles. Also included is the beginning of the Eagle Lakes-Fordyce OHV Trail and the Signal Point-Red Mountain OHV trail system. A moderately high level of winter recreation including snowmobiling, snowplay, and cross-country skiing, originates at Big Bend and uses the Huysink Road for access into more remote areas (MA 63, 67 and 76).

The Overland Emigrant Trail passes through this MA.

The selected emphasis species are deer, rainbow trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Maintenance of the visual quality of the foreground and middle ground as viewed from Interstate 80 is a concern. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop. Timber stands are scattered and often on steep, rocky terrain with high road development costs. Most timber management activities undertaken would probably be visible from the freeway.

Future winter recreation uses could conflict in areas of concentrated use, such as at Big Bend.

Operation of the Big Bend Visitor Center provides a key recreation and other information contact point. Without this facility, reaching the public and responding to their information requests is difficult.

Opportunities exist to improve deer habitat.

There is concern that management activities could adversely affect the historical integrity of the Overland Emigrant Trail: significant segments of the trail need to be protected from disturbance.

III. RESOURCE MANAGEMENT EMPHASIS

The primary resource management emphasis is visual quality.

Continue to emphasize developed recreation and interpretive services at Big Bend and dispersed summer and winter recreation uses.

Manage brush to improve or maintain deer habitat.

The desired future state of the vegetation is mixed age classes of timber and brush throughout the MA.

Maintain the historical integrity of the Overland Emigrant Trail.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural
- B. Visual Quality Objective- Retention. Partial retention within the developed sites. The sites will, however, meet the retention VQO when viewed as middleground from travel routes and other occupancy sites
- C Transportation Management Policy - Maintain existing primitive access roads for recreation throughout the area. Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions- Designated routes only in vicinity of Cisco Grove and Big Bend. Remainder of MA open
- E Forestwide Standards and Guidelines- All apply.

V. AVAILIABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A0 Developed Recreation & Interpretive Service Sites Management. Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development. Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L6 Trail Construction/Reconstruction - Special Uses
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L13 Transportation Management, Trails. Restricted Use

- P5 Fire Protection - Visual, High Use, Reservoirs, improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The prescription emphasizes visual quality. Other resource activities are subordinate to visual quality. Because of the importance of visual quality, the steep, rocky slopes which prevail, and the high costs involved, timber will not be harvested on a regulated basis.

Provide self service information center at Big Bend for recreationists. If funding permits, staff the visitor center to answer questions and interpret Forest activities.

Maintain four-wheel-drive routes and reroute as necessary to correct problems. Keep the Loch Leven Trail closed to motor vehicles.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

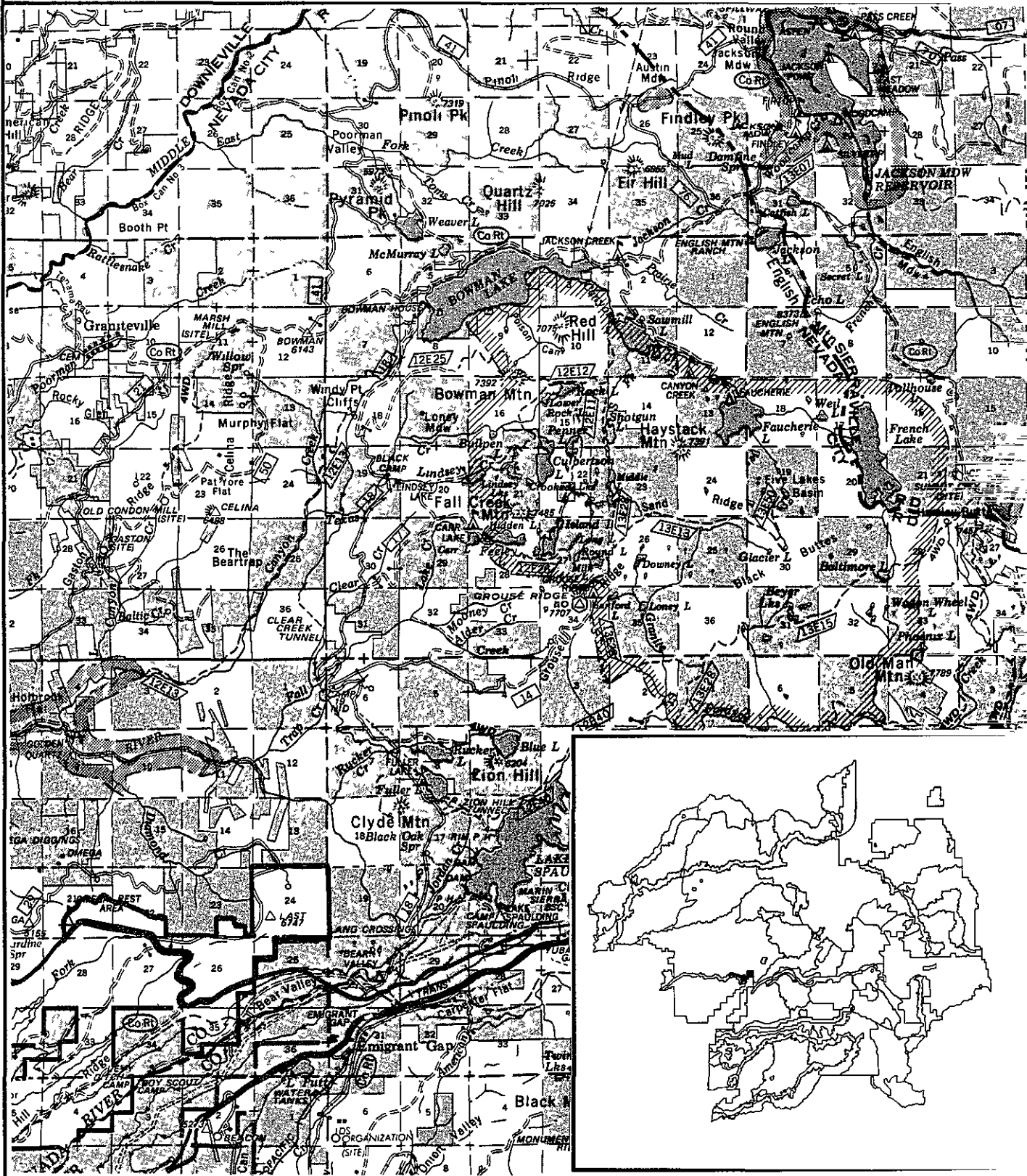
Monitor cross-county skiing, snowplay, and snowmobile use

- 11 Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices In Chapter V

MANAGEMENT AREA 058

STEEPHOLLOW

T17N, R11E



058 STEEPHOLLOW

1,494 GROSS ACRES

1,494 NFS ACRES

I. DESCRIPTION

This management area (MA) is located on the north side of State Highway 20 at the headwaters of Steephollow Creek. It extends from the Omega Rest stop to the Forest boundary at Bear Valley. The area adjacent to Highway 20 has received some treatment as a shaded fuelbreak. Access through the area is provided by a number of old logging access roads. Summer and fall recreation use is light. Winter recreational use of the area is very heavy with cross-country skiing being the most popular winter and spring activity. Skiing is primarily along marked cross-country ski trails. Snowplay is moderate to heavy at the rest area and at turnouts along the highway. Snowmobile use is prohibited, use is very light.

The land is vegetated with mixed conifer and true fir. Umpier stands. There are 279 acres of plantations at the northeastern edge of the area. Wetland acreage is insignificant. None of the area is unsuitable productive forest land. Timber cutting in recent years removed larger trees.

Selected emphasis species are deer, rainbow trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Use of the area during the time when the area is snow covered has been an issue in recent years. Conflicts occur between cross-country skiers, snowmobile users, four-wheel-drive vehicle operators, and private landowners seeking access through this area to their property. Cross-country skiers, the dominant winter recreation users, have requested that the area be closed to winter vehicle travel.

The area adjacent to Highway 20, a scenic route included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation, is viewed by a large segment of the general population, and scenic quality of the route is an important concern.

There is an opportunity to improve cover and forage in the deer migration corridor. There is also an opportunity to manage hardwoods for deer.

The area is highly productive timberland and an opportunity exists to meet timber objectives while enhancing winter recreation quality and meeting visual quality objectives. Fuelwood opportunities exist from fuelbreak work as well as other timber management activities.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphases are timber management, winter recreation, and visual quality (along Highway 20). Timber stands in the future will be mixed conifers, with age classes distributed throughout the MA.

Emphasize deer in coordination with managing timber, manipulate brush and hardwoods to improve deer habitat.

Emphasize nonmotorized winter recreation during that part of the year when the area is snow covered.

Fuelbreaks along Highway 20 will emphasize removal of brush and trees and pruning trees within 20 to 40 feet of the road edge to improve sight distances, they will also complement timber and visual objectives.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rooded natural
- B Visual Quality Objective - Retention for foreground and partial retention for middle ground as viewed from Highway 20. Modification for remainder of area
- C Transportation Management Policy - Close roads seasonally to exclude all motorized travel when the area is snow covered. At other times, Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Designated routes only. Closed to over-the-snow vehicle travel
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A5 Restricted OHV
- A6 Closed OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 See Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G5 Minerals Management - Saleables

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multi-resource Road Access Development - Road Construction/Reconstruction
- L6 Trail Construction/Reconstruction - Special Uses
- L9 Timber Management Roads - Regulated Use
- L10 Transportation Management, Roads - Restricted Use
- L11 Transportation Management, Roads - Restricted Use
- L13 Transportation Management, Trails - Restricted Use

- P1 Timber Management - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Maintain marked cross-country ski trails and designate new ski trails as opportunities develop. **Modify** timber management practices along ski trails to create a continuous opening in the tree canopy. This allows the snow to fall to the ground, rather than being intercepted by the tree canopy. This enhances the quality of the ski trails. Close roads to vehicles in the winter and prohibit ~~over-the-snow~~ vehicle travel. In the area ~~Snowmobile~~ routes may be provided for private land access only, through special-use permit.

Manage the foreground and middleground areas along Highway 20 to maintain a landscape where management practices remain visually subordinate to the characteristic landscape. Carry some individual trees or groups of trees past their economical rotation. In the remaining areas, manage timber under an even-aged system to achieve a 150+ year age class.

Complete a plan for managing timber in the area viewed from Highway 20 (includes MA 61) prior to the end of this plan period.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

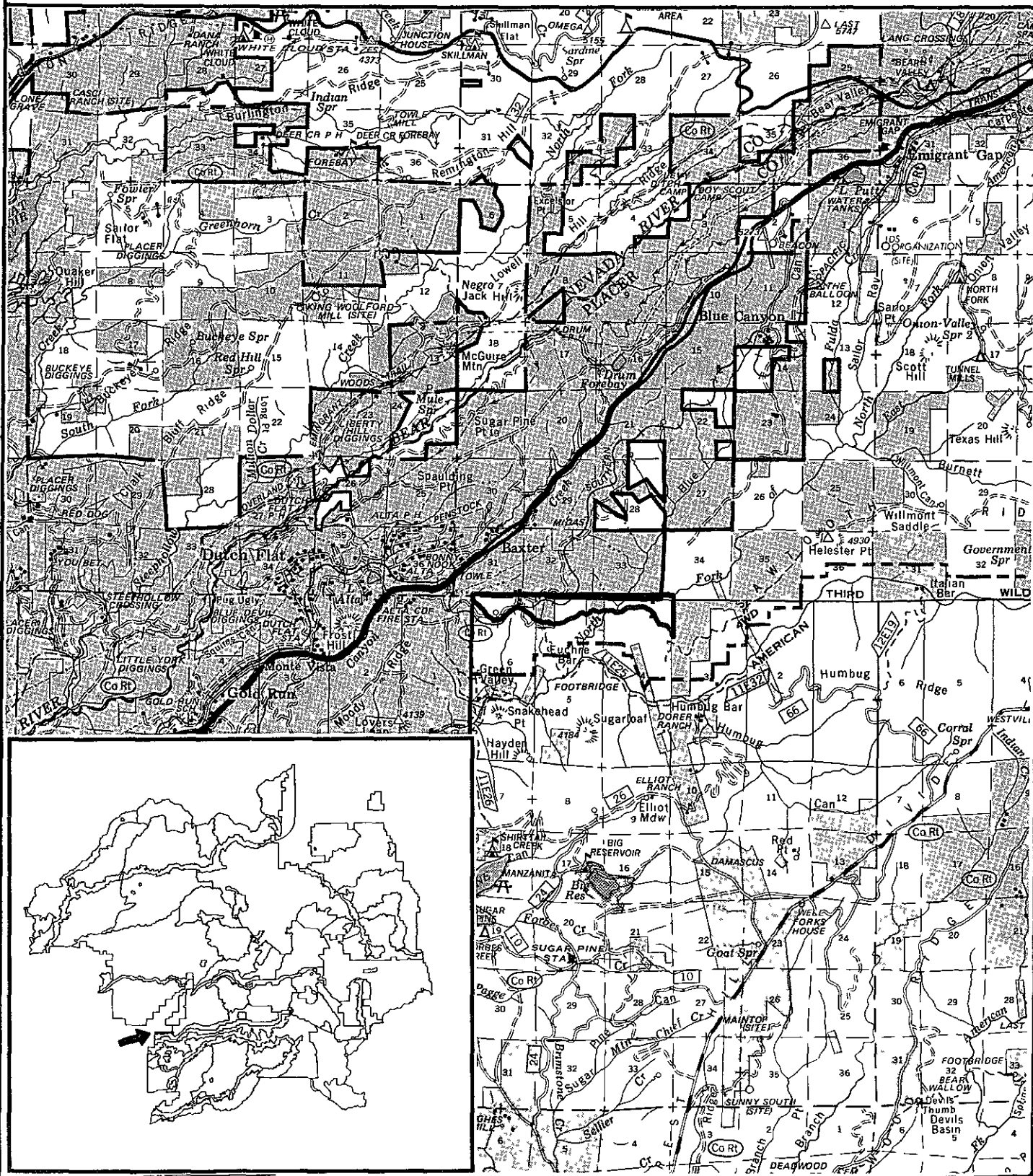
Mondor winter OHV and cross-country ski use to resolve conflicts

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 059

CASA LOMA

T15N, R11E



059 CASA LOMA

603 GROSS ACRES

495 NFS ACRES

I. DESCRIPTION

This management area (MA) is located south of Interstate 80 on the western forest boundary north of the North Fork American River Canyon. It extends east to a point about one-quarter mile beyond the Rawhide Mine. The Southern Pacific Railroad runs east and west through the area. Casa Loma summer home tract, with twelve cabins under special-use permit, is located within the area.

A county road provides access to the area from Interstate 80 to Iron Point. The Euchre Bar trailhead, which provides foot access to the North Fork American Wild River, is located at Iron Point. User-maintained roads provide access to private land at Rawhide Mine and north of the MA. Many of these access roads lack National Forest System rights-of-way. The MA contains key winter deer range.

Vegetation within the area consists of shrubs, black oak stands, and mixed conifer stands with black oak. Wetland acreage is insignificant. There are 178 acres of unsuitable productive forest land.

The selected emphasis species is deer.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Access to this area is provided by a county road, however, other roads are user maintained and often in poor condition. The road to Rawhide Mine is too narrow for safe public travel and is closed to the public by a gate. Use of the road by the landowners sometimes creates complaints from the public who want vehicle access to the river at Rawhide Mine.

Trespass problems occur because of the remote location of this MA.

The Iron Point trailhead does not provide adequate parking for users of the Euchre Bar trail. Other recreational use of the area is centered around the Casa Loma Summer home tract. This tract only requires Summer access.

Because of the limited amount of timber available, management opportunities are limited. Fire hazard is high because of the vegetation types, southerly exposure, lower elevations, and the possibility of fires originating in the North Fork American River Canyon. The area provides key winter deer range, and there are opportunities to improve this resource through management of shrubs and black oak stands.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is dispersed recreation with some wildlife habitat improvement. Emphasize managing vegetation to create different age classes in shrub-covered areas. Increase the acorn production of black oak stands, and ensure a component of black oak in mixed conifer stands for deer. In black oak stands, emphasize maintaining a semi-continuous canopy by selectively thinning.

Emphasize special-uses management (Casa Loma summer home tract and Rawhide Mine road). Emphasize development of a trailhead parking area and rerouting of the upper portion of the Euchre Bar Trail to serve the parking area.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural
- B Visual Quality Objective - Partial retention
- C Transportation Management Policy - The road to Rawhide Mine will remain closed to the public but will remain open, if maintained, to properly owners under road use permit
- D Off-Highway Vehicle Restrictions - Designated routes only. Seasonal closure on key winter deer range November 1 to May 1, when deer are using the area
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A5 Restricted **OHV**
- A6 Closed **OHV**
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or **Rehabilitation** of Prwate & Other Public Recreation **Facilities**

- C2** Stream Fisheries- **Nonstructural** Improvement and Maintenance
- C3** Stream Fisheries- Structural improvement and Maintenance
- C6** Early Succession **Vegetation** Management
- C7** **Midsuccession** Vegetation Management
- C8** Late Seral Stage Vegetation Management
- C9** Hardwood Management
- C10** Riparian and Meadow Vegetation Management
- C12** Structural Habitat Improvement and Maintenance

- G1 Minerals Management - Locatable
- G2** Minerals Management - Locatable **Withdrawals**
- G5 Minerals Management - **Saleables**

- J2 **Land Adjustments** - Limited

- L1 Timber Access Road Development - Road **Construction/Reconstruction**
- L4 Trail **Construction/Reconstruction**- Foot & Equestrian Traffic Only
- L8** Transportation Management, Roads - Open
- L9** Transportation Management, Roads - Regulated Use
- L10** Transportation Management Roads. Closed
- L11** Transportation Management, Roads - **Obliterated**
- L13** **Transportation** Management, Trails - Restricted Use

- P1 **Fire** Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

In the **isolated tract and small suitable acres**, timber will not be managed on a regulated timber sale because of the **range to provide a 60/40 cover mixture**.

of the Casa Loma recreation residences Regulate the **Rawhide Mine road use for safety, and keep it closed to the public.**

Construct adequate parking at Euchre Bar trailhead during the first decade

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

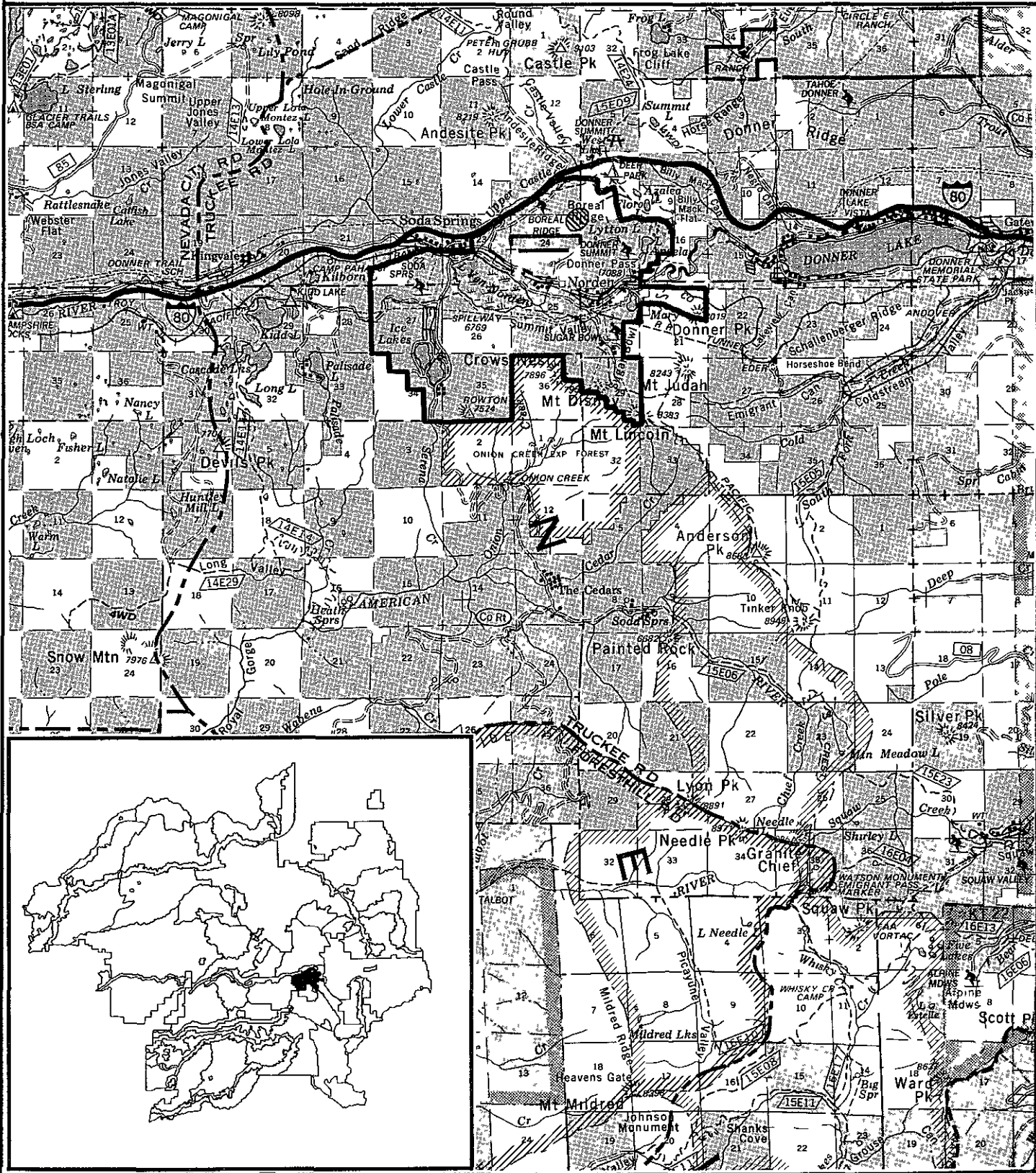
Monitor deer use of the key winter deer range

1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 060

SUMMIT

T17N, R14E



060 SUMMIT

6,932 GROSS ACRES

1,442 NFS ACRES

I. DESCRIPTION

This management area (MA) is located near the crest of the Sierra Nevada Mountains in the heart of the Donner Summit recreation area. The area lies south of Interstate 80, primarily west of the crest. Its borders include Donner Peak, Mt. Judah, Mt. Lincoln, Crows Nest, and the Onion Creek Experimental Forest. Within the area are the communities of Norden, Serene Lakes, and a portion of Soda Springs. The elevation varies from 6,700 to 8,400 feet. Terrain varies from flat meadows to gentle timbered slopes to sparsely covered rugged terrain at the higher elevations. The area is basically a bowl with all aspects represented. Lake Van Norden Meadow is about at the center of the bowl. There are 112 acres of wetlands. There are 1,147 acres of unsuitable productive forest land.

The MA contains a portion of the Summit Grazing Allotment,

Four existing downhill ski resorts (Boreal Ridge, Soda Springs, Donner Ski Ranch, and Sugar Bowl) are within the area. (Another portion of Sugar Bowl extends into management area 071, Tinkers.) Boreal Ridge, Donner Ski Ranch, and Sugar Bowl use portions of National Forest System lands for their operations under permit. Boreal Ridge, Soda Springs, and Donner Ski Ranch have the potential to expand onto National Forest System lands. Royal Gorge, a large Nordic ski area, has its base facilities and many miles of track and skating lanes within this MA. They have a ski slope special-use permit for a portion of their operation.

Special-use permits for three lodges within the Summit tract provide for intensive private sector recreation development on National Forest System land in Section 20. A 1987 exchange disposed of three other lodges within the Lake Van Norden tract.

Much of the area is rural ROS class with some of the less developed National Forest System land tending toward roaded-natural appearing. Donner Summit Public Utility District, whose base facilities are under permit on National Forest System land, provides water and sewer service in the area. The Forest Service Central Sierra Snow Lab has its office and base facilities within the area.

A transmission corridor passes through this area and includes the Trans-Sierra Southern Pacific Railroad major power and gas line. Old Highway 40 and the Baker Ranch-Riverton Road provide the major traffic routes. Both are county roads and both have major winter peak traffic flow limitations.

Significant cultural resource (historic and prehistoric) sites are located on both private and public lands within the area. The Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area. A significant portion of the trails has been obliterated by development.

The Boreal Ridge MA 55, on top of Boreal Ridge, is surrounded by this MA.

The Pacific Crest Trail cuts through the eastern most portion of the unit.

The selected emphasis species are the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The opportunity exists to expand Boreal Ridge, Donner Ski Ranch, Sugar Bowl, and Soda Springs to additional National Forest System land. If existing trends continue, the majority of new skiers will be commuting to the ski areas on a daily basis from the Central Valley and San Francisco Bay areas.

The communities within the MA, and Truckee to the east, are faced with limitations to their ability to support major growth in the ski industry. Traffic and alternate transit systems, utilities, housing, and other services are major factors comprising this concern. The California Department of Transportation has expressed concern over increases in ski area capacities and the effects that it could have on I-80. The limiting factor for the Sugar Bowl ski area is parking. However, this (and congestion) will be a factor in any expansion of the other areas as well.

There is a concern for the protection of cultural sites and that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation activities.

Because of the large number of recreationists, there is a concern with the retention of the natural character of the National Forest System land within the areas that are undeveloped.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen from Interstate 80. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

Due to their land-locked status and the Placer County ordinances prohibiting on-street parking, there is a concern for all-year access to public lands and other recreation facilities (such as the PG&E campground at Lake Van Norden). Many of these parcels have been traditionally used by crossing private lands. As these private lands develop, the traditional access has been cut off.

Local Donner Summit ski industry mass transit is in the developmental stage and appears to be a highly beneficial program. There are apparent opportunities to enlarge the program, thereby reducing impacts associated with traffic.

There is an opportunity to exchange intensively developed National Forest System parcels, west of Lake Mary, for private parcels that better meet the management objectives of the Tahoe National Forest.

Some residents living adjacent to National Forest System lands within this MA have expressed concern that Forest Service management activities would alter their 'green belt' that served as parks, visual screen, and open recreation areas for their neighborhood.

111. **RESOURCE MANAGEMENT EMPHASIS**

The resource management emphasis is continued operation and development of developed ski areas, lodges, recreation residences, and year-round dispersed recreation.

Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include this trail into the National Historic Park System.

The area is unsuited for regulated timber management. Emphasize recreation values in Section 26 (south of Lake Van Norden) and portions of Section 24 (north of Lake Van Norden).

Continue to coordinate with Pacific Southwest Forest and Range Experiment Station in their research mission of the Central Sierra Snow Laboratory.

The desired future state is a balance between the ski industry growth and community support service capabilities. The vegetation will present a variety of healthy, rural to natural-appearing landscapes. Management within areas visible from I-80 will be consistent with the goal of maintaining a predominantly natural landscape. The public's right to use the 'public travelway' from Serene Lakes (Ice Lakes) area toward Kidd Lake will be retained.

Coordinate with state and local agencies to provide dispersed winter sports parking in the SW 1/4 of Section 26.

Acquire public access to the National Forest System portion of Section 34 (MA 76) for multiple use purposes.

IV. **MANAGEMENT AREA STANDARDS AND GUIDELINES 1/**

- A Recreation Opportunity Spectrum - Rural with portions roaded natural
- B Visual Quality Objective - Partial retention. Modification within the developed sites. The sites will, however, meet the partial retention VQO when viewed as middle ground from travel routes and other occupancy sites.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply. Attempts will be made to establish agreements between appropriate agencies and private interests to provide public access to NFS lands and other uses.
- D Off-Highway Vehicle Restrictions - Closed summer. Open in winter, except for special-use permit areas.
- E Forestwide Standards and Guidelines - All apply.
- F Other - Environmental analysis will be needed for each downhill ski expansion proposal.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A3 Commercial Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A6 Closed OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- AS Recreation Management (Private & Mher Public Sector)
- Ai0 Downhill Skiing
- Ai1 Recreation or IS Site Construction or Rehabilitation
- Ai2 Downhill Skiing Planning, ES/EA, Development
- Ai3 Development or Rehabilitation of Private & Mher Public Recreation Facilities

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management. Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management. Leasables
- G4 Minerals Management - Leasable Withdrawals

- J2 Land Adjustments - Limited

- Li Timber Access Road Development- Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction

- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L6 Trail Construction/Reconstruction - Special Uses
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- Li2 Transportation Management, Trails. Open
- Li3 Transportation Management, Trails - Restricted Use
- Li4 Pacific Crest National Scenic Trail Management

- P5 Fire Protection- Visual, High Use, Reservoirs, Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Although the Forest Plan will be revised in 10-15 years, we expect that the lands allocated currently for winter sports at Sugar Bowl, Donner Ski Ranch, and Boreal Ridge will continue well beyond the Initial Plan period

Resolve the issues and concerns related to ski industry growth and traffic in an environmental analysis for individual ski expansion proposals. Plan expansion of downhill ski areas in coordination with available or developable community services. Blend new ski runs and facilities into the natural landscape.

Emphasize protection of cultural values in the assessment of individual projects. Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in The Overland Emigrant Trail Through The Tahoe National Forest* until more refined evidence is disclosed.

Address the retention of the natural character of NFS lands and the scenic quality of the I-80 corridor in individual assessments related to each project. Retain the natural character of undeveloped National Forest System parcels except on parcels where ski industry expansion is approved.

Address continued public access to public lands as individual projects are analyzed, by acquisition of rights-of-ways for multiple use purposes. Develop dispersed winter spolta parking in the SW 114 of Section 26.

Protect significant cultural resource indicator sites on National Forest System land using Forestwide Standards and Guidelines. Try to acquire sites currently in the private sector.

It is the responsibility of developers, in consultation with county planning agencies, to provide for 'greenbelts' and parks for communities. It is **not** a Forest Service responsibility to provide subdivision amenities. However, the Forest Service will continue to analyze the effects of **off-site** impacts on adjacent lands during project-level planning

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

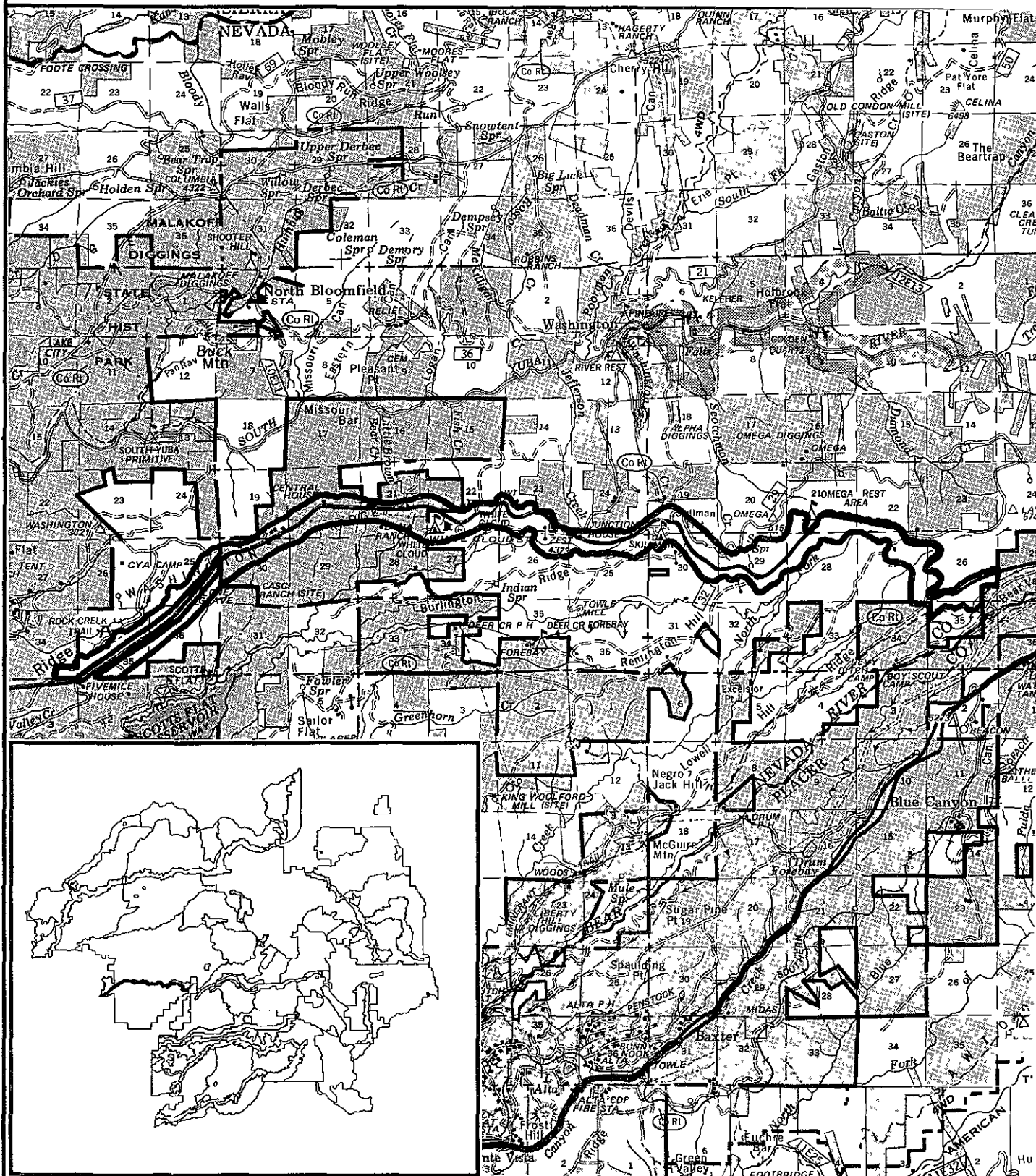
Monitor County zoning and land use regulations for coordination of County and Forest land management objectives

- 1/ Refer to Resource Support Element Maps and **Forestwide** Standard 6 and Guidelines.
- 2/ Refer to complete Descriptions of Management **Practices** in Chapter V

MANAGEMENT AREA 061

TWENTY

T17N, RIOE



061 TWENTY

1,966 GROSS ACRES

1,966 NFS ACRES

1. DESCRIPTION

This management area (MA) includes the land adjacent to and within the foreground viewing area along State Highway 20. It extends from the Forest boundary at Five Mile House to the Forest boundary at Bear Valley. Private land and State easements are included in this MA. Private land in the western portion of the MA is being developed for residential use. Highway 20 is zoned as a scenic corridor by Nevada County, and portions are classed as Scenic Highway by the State.

The land is forested with mixed conifers and black oak along the route east to the area around the Omega Rest Area and Overlook. In this vicinity, there are several pine plantations which were established in the 1960's. East of the California Department of Transportation Rest Area, the vegetative cover is primarily true fir. Land on the north side of the highway, east of the rest area, is in MA 58, Steephollow. There are 18 acres of wetlands. There are 82 acres of unsuitable productive forest land.

The White Cloud Campground, Picnic Area, and Station, and Skillman Campground are within this MA. In addition to these developed sites, the area provides winter recreation opportunities for snowplay, cross-country skiing, and snowmobiling, accessed from turnouts along Highway 20. A nonmotorized trail has been constructed and is maintained from Lone Grave to Omega Rest Area by volunteers from a local equestrian club.

Aerial telephone and powerlines, authorized by special-use permit or Federal Energy Regulatory Commission license, parallel the highway through this MA from the Forest boundary to White Cloud, however, they are generally screened from view.

Selected emphasis species are deer, spotted owl, brown trout, and the riparian group. Portions of SOHAs Q-1 and P-1 are located in this MA.

The California Department of Forestry and Fire Protection maintains a shaded fuelbreak along the highway. Caltrans maintains two overlooks (Omega and Washington), and it is considering the development of a new passing lane in the area of Omega Rest Area that could require road widening and vegetative manipulation.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

An issue is maintaining and enhancing the visual quality of the foreground area viewed from Highway 20. The State classifies a portion of the highway as a scenic route and includes the entire road in the Master Plan of State Highways Eligible for Official Scenic Highway Designation. The area is viewed by many travelers with a high concern for scenic quality.

Most of the land is productive timberland and can be managed to provide timber for commercial uses. An issue is enhancing the visual quality of the corridor through harvesting timber if carefully planned and executed to provide added diversity to the landscape. In conjunction with this, there is a concern that fuelbreak maintenance work should be modified to meet visual quality objectives in the long term. Perpetuation of the present fuelbreak treatment methods creates even less variety than the present condition.

Recreation sites in this area are adequate to meet present needs as well as the needs for some time in the future. Winter recreation demands are only partially met by the existing turnouts along the highway.

Deer are often killed by motor vehicles when crossing the highway or when attracted to the roadside during the winter.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize timber management practices to improve visual quality. The desired future state of the timber stands is various sizes and age classes of conifers and hardwoods. Emphasize adding variety to the landscape while maintaining a natural appearing foreground. An important component of the vegetation cover for both wildlife and visual quality is black oak: emphasize retaining black oak throughout the area.

Fuelbreak and brush manipulation work will emphasize removal of brush and trees and pruning within twenty to forty feet of the road edge to improve sight distance for deer. Emphasize fuelbreak maintenance work which is compatible with and supportive of visual and timber management objectives.

Coordinate with California Department of Transportation and Nevada County during project planning and development that could affect aesthetics or safety along Highway 20.

Propose withdrawal from mineral entry and leasing for 200 feet along Highway 20

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural.
- B Visual Quality Objective - ~~Retention~~
- C Transportation Management Policy - New highway encroachments on National Forest system lands will ~~be~~ gated for closure Forestwide Standards and Guidelines apply.
- D ~~Off-Highway~~ Vehicle Restrictions - Designated routes only. Open to ~~over-the-snow~~ travel.
- E Forestwide Standards and Guidelines - All apply
- F Specdic Standards and Guidelines - Propose withdrawing ~~portions of MA~~ from mineral *entry* to protect *visual quality*

V. MANAGEMENT AREA PRESCRIPTION 2/

- A1 Nordic ~~Cross-Country~~ Skiing
- A4 Open OHV
- A5 Restricted OHV
- A6 Developed Recreation & Interpretive Service *Sites* Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreahon or ~~IS~~ Site Construction or Rehabilitation
- Ai3 Development or Rehabilitation of Private & Other Public Recreation ~~Facilities~~
- A18 Visual Resource Travel Route Viewshed Planning

- C7 Late Seral Stage Vegetation Management
- ~~C8~~ structural Habitat Improvement and Maintenance

- ~~E7~~ Special Cutting
- E8 Uneven-Aged Cutting Method
- ~~E9~~ Special Cutting - Urban/Rural/Wildland Interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawais

- J1 Land Adjustments - Retain and Acquire

- L1 Timber ~~Access~~ Road Development - Road ~~Construction/Reconstruction~~
- ~~L2~~ Multiresource Road Access Development - Road Construction/ Reconstruction
- L5 Trail ~~Construction/Reconstruction~~ - Foot, Equestrian and Trailbike
- L6 Trail ~~Construction/Reconstruction~~ - Special Uses
- L7 FA&O ~~Construction/Reconstruction~~
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open

- P5 Fire ~~Protection~~ - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Timber management will be used to achieve visual quality. Prepare a visual resource travel route viewshed plan to identify the specific means of achieving the desired visual quality (refer also to MA 58). Manage timber on a regulated basis using special cutting practices to achieve the desired result. Design fuelbreak treatments and manage vegetation to improve visibility of deer near the highway and to meet visual quality and timber management objectives. Maintain the existing recreation facilities and trails to protect resources and provide for safe recreational experiences.

Winter recreation parking needs cannot be totally met because of insufficient places for safe parking. Encourage Caltrans to permit such parking in future projects by constructing appropriate turnouts.

Develop spotted owl management plans for SOHAs Q-1 and P-1.

VII. SPECIFIC MONITORING AND EVALUATION

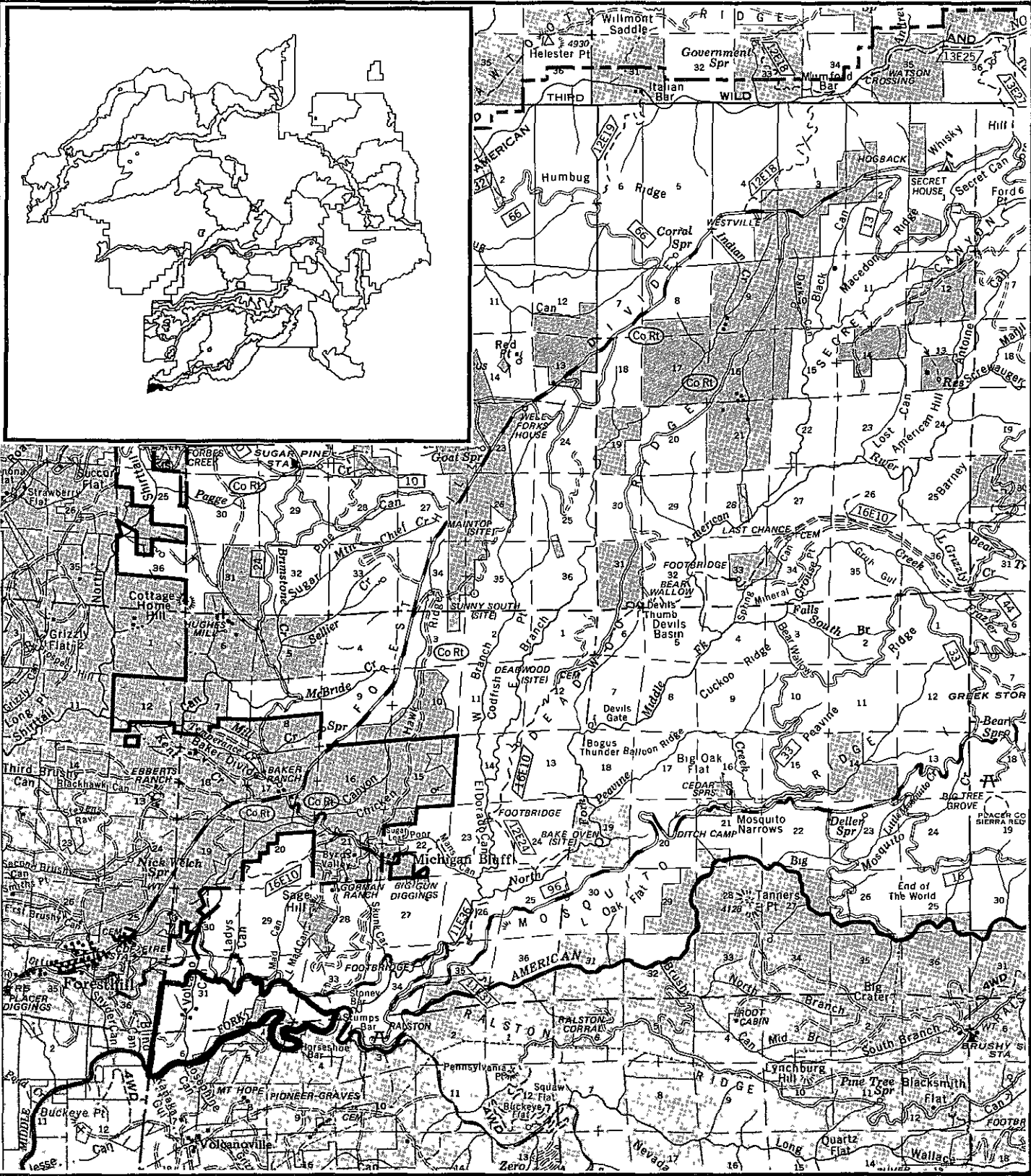
None.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 062

QUEENS

T13N, R11E



062 QUEENS

1,830 GROSS ACRES

1,596 NFS ACRES

I. DESCRIPTION

This management area (MA) includes the following physical and administrative features: Middle Fork of the American River, Volcano Canyon, Lady's Canyon, Horseshoe Bar, Three Queens Mine and access road, and a 60-KV power transmission line. The area is characterized by very steep, brushy canyonlands. Elevation ranges from 1,400 to 2,200 feet.

The predominant vegetation type is mixed brush and live oak, with a scattered overstory of digger pine. Narrow stringers of commercial timber occur along Volcano and Lady's Canyons. There are no wetlands. There are 350 acres of unsuitable productive forest land. No logging has been done within this MA.

The Volcano Fire of 1960 started in this area at the bottom of the Middle Fork Canyon. The fire spread rapidly to the rim of the canyon and continued burning for several days along the Forest Hill Divide.

This MA is mostly visible from either the Mosquito Ridge road or the Middle Fork American River.

The area is over 50 percent accessed, due largely to the Three Queens Mine Road and the Mosquito Ridge Road. Only the Mosquito Ridge Road is open to public traffic.

Selected emphasis species are bald eagle, golden eagle, rainbow and brown trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The major concern is how to manage this area to prevent the reoccurrence of another disastrous wildfire. This concern will be heightened by the proposed construction of the Auburn Dam and Reservoir.

Management of the small timber resource is another concern. The concern is that stand regeneration and fuel treatment in this MA would be expensive and risky.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize fire prevention and watershed protection. The timber resource present within the Queens MA is unsuited for regulated timber production.

The desired future condition of the MA is the same as it is today.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Semi-primitive motorized
- B. Visual Quality Objective - Partial retention. Short-term VQO of modification is allowable for implementation of projects designed to enhance fire management and wildlife habitat.
- C. Transportation Management Policy - Regulated use
- D. Off-Highway Vehicle Restrictions - Designated routes only winter and summer.
- E. Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-County Skiing
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C3 Lake Fisheries - Nonstructural Improvement and Maintenance
- C4 Lake Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- L2 Multi-resource Road Access Development - Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L6 Trail Construction/Reconstruction - Special Uses
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The fire concern can not be resolved. Restricting public access where possible lowers the risk to some extent, but it is not possible to eliminate the risk of human-caused fire. Patrol, sign, and treat natural fuelsto create fuel breaks as funding allows.

The entire MA shall be considered unsuitable for regulated timber production.

VII. SPECIFIC MONITORING AND EVALUATION

If construction continues, evaluate the impacts of the Auburn Dam and Reservoir on human-caused fire risk. Determine needs for extra prevention measures.

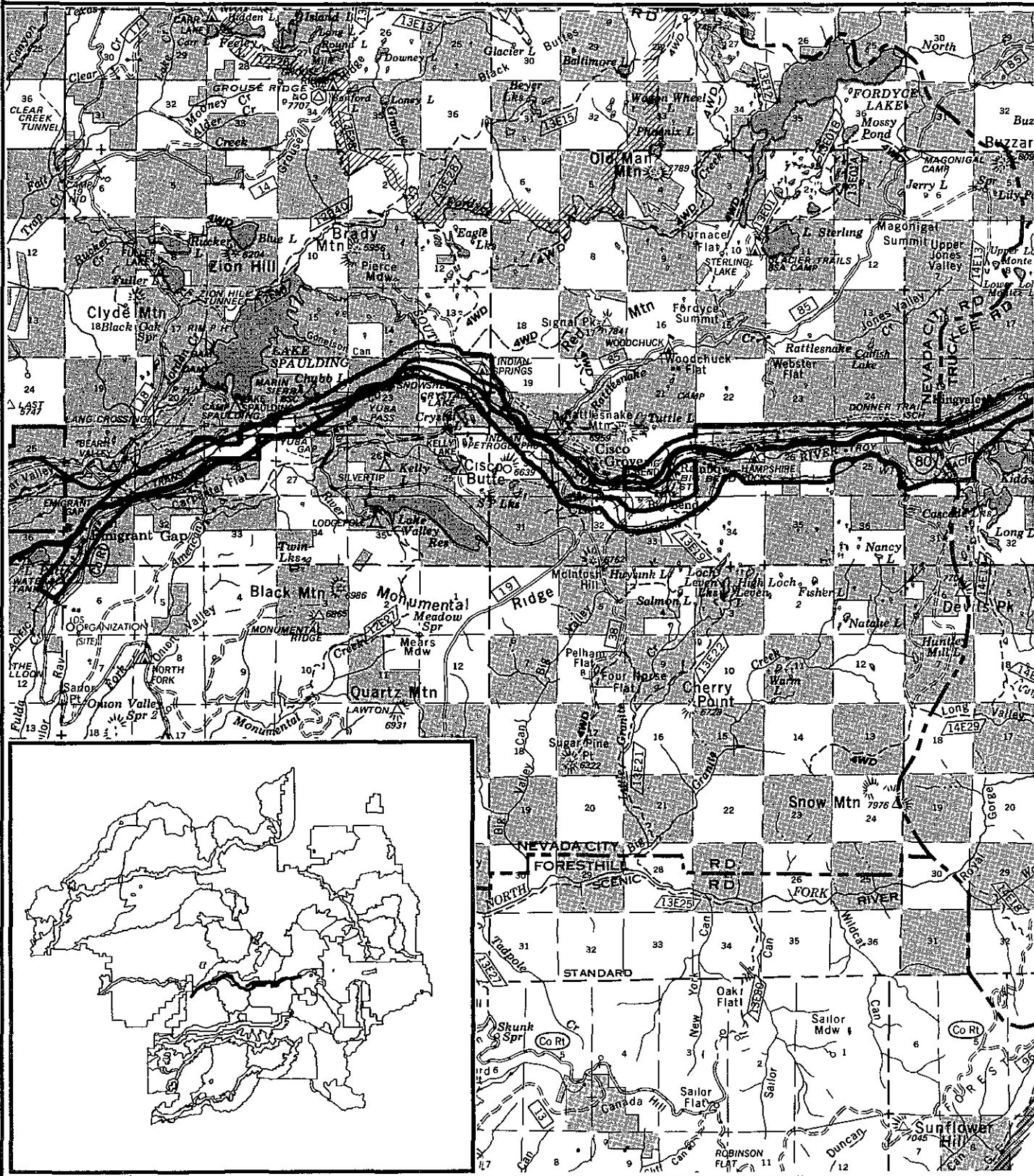
Continue to participate with the State in managing and monitoring white water rafting.

1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
2/ Refer to the Date of Mitigation Practices in Chapter V

MANAGEMENT AREA 063

EMIGRANT

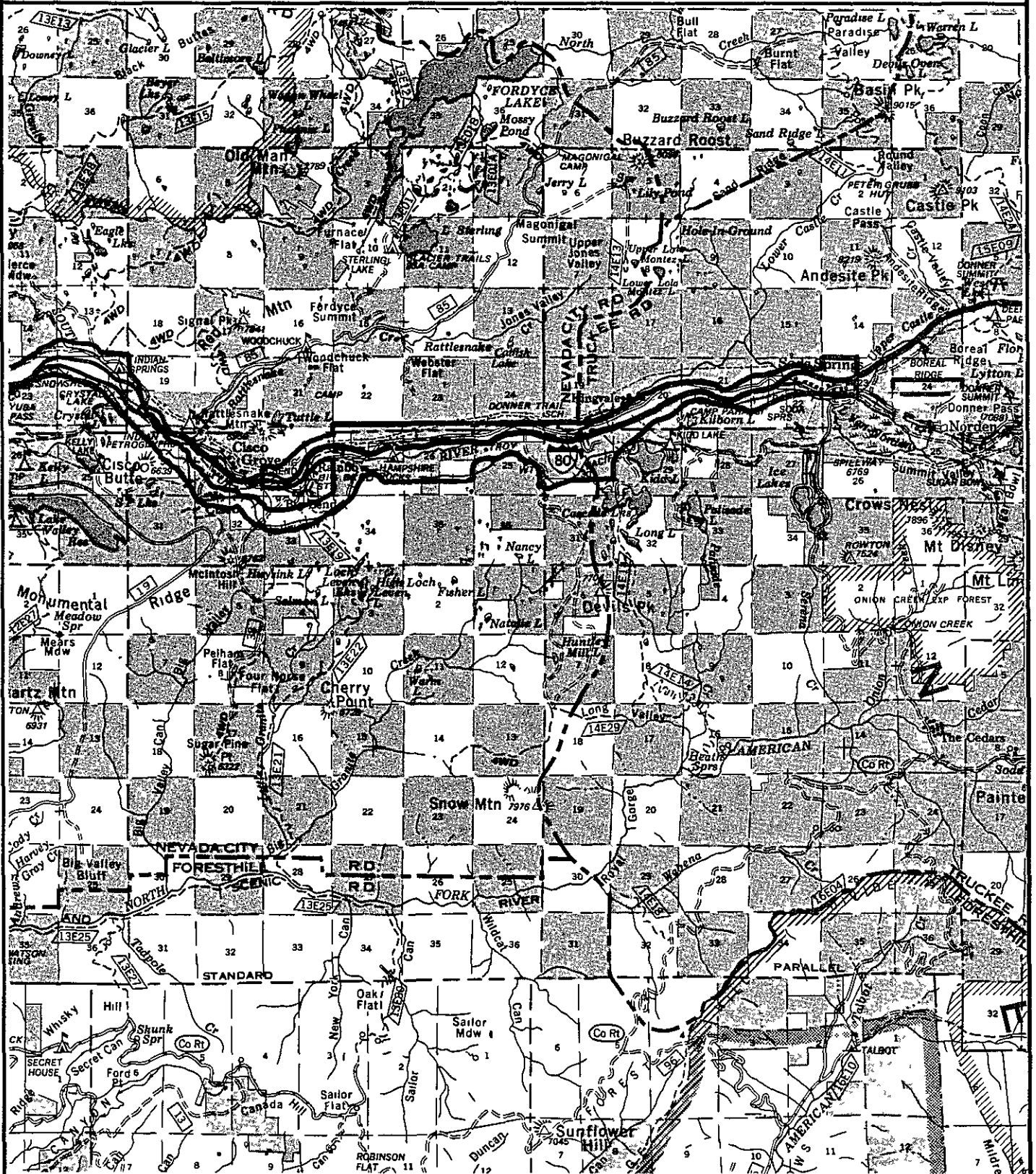
T17N, R13E



MANAGEMENT AREA 063

EMIGRANT

T17N, R13E



063 EMIGRANT

3,625 GROSS ACRES

1188 NFS ACRES

I. DESCRIPTION

This management area (MA) is a utility corridor that includes the Southern Pacific Railroad, Southern Pacific oil and gas pipeline, and Interstate 80 from Yuba Gap to Soda Springs. Also included within this corridor are the high-voltage power transmission lines paralleling the freeway. Most of the land along the freeway is privately owned.

The South Yuba River, the canyon bottom, and portions of the canyon sides are included in the MA. Vegetative cover includes riparian vegetation along the river, dense stands of timber, scattered timber and shrubs, and rocky, nearly barren slopes. There are 121 acres of wetlands. There are 734 acres of unsuitable productive forest land.

Vehicle access throughout the area is provided by Interstate 80, county roads, and Forest Service and user-maintained roads. In the past, there have been some small fires started by the railroad along the right-of-way, but no fires have occurred for nearly a decade.

Developed recreation sites within the area include Indian Springs, Big Bend, and Hampshire Rocks Campgrounds, all located next to the South Yuba River. A summer home tract is located at Big Bend. Donner Summit Fire Protection District and Donner Summit Public Utility District hold a special-use permit for their facilities located just north of Interstate 80.

Recreation use during the summer months is high, primarily along the river. Winter use is moderate, concentrated around the freeway access routes. Winter uses include snowplay, cross-country skiing, and snowmobiling. A portion of the Overland Emigrant Trail traverses the area.

Selected emphasis species are rainbow trout and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Interstate 80 is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop. Maintenance of visual quality of the areas viewed from Interstate 80 is a concern. Because of the development that has already taken place, human activities are very noticeable on the existing landscape.

Recreation use along Interstate 80 is very high. Use in existing Forest Service sites is exceeding capacity. Protection of the soil and water resources in the developed recreation sites along stream sides is important. Parking and staging areas are needed to access dispersed recreation opportunities in adjacent MA's.

Interstate 80 and the Southern Pacific Railroad carry all types of materials, including some that are very hazardous. In the event of an accident, the quality of the water and the safety of users of the area may be threatened by a hazardous material spill.

There is concern that management activities could adversely affect the Overland Emigrant Trail.

III. RESOURCE MANAGEMENT EMPHASIS

Place utilities within this MA whenever possible to keep other lands from being impacted by these uses. As much as possible, design utilities to blend with the natural surroundings.

Maintain existing developed recreation sites as attractive, safe facilities protecting soil and water quality. Coordinate with State, local, and private developers to provide public, dispersed, and winter sports opportunities.

The MA is unsuited for regulated timber production.

Propose withdrawal from mineral entry and leasing for 400 feet from each side of I-80.

Protect significant segments of the Overland Emigrant Trail from disturbance and maintain the trail's historical integrity.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural
- B Visual Quality Objective - Partial retention To meet this objective will, in some cases, require significant visual mitigation and project-level involvement of the Forest landscape architect. Where proposed installations are in visually prominent locations, maximum practical mitigation will be implemented to fulfill this requirement as much as possible.

Many established utility structures do not currently comply with this VQO. Over time, and where feasible, mitigation will be required to bring these existing facilities into compliance with partial retention. Such mitigation would be done in conjunction with upgrades or modifications of these facilities.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Mf-Highway Vehicle Restrictions - Designated routes only in vicinity of Cisco Grove and Big Bend. Remainder of MA open.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A3 Commercial Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- AS Recreation Management (Private & Mher Public Sector)
- A i 1 Recreation or IS Site Construction or Rehabilitation
- A i 3 Development or Rehabilitation of Private & Mher Public Recreation Facilities

- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables

- J2 Land Adjustments - Limited

- I 2 Multiresource Road Access Development - Road Construction/Reconstruction
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

- P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Design all new Utilities to minimize visual impacts. Maintain existing recreation sites to protect soils and water quality. Facilities such as parking and staging areas may be developed to provide access to dispersed recreation opportunities away from this MA.

There is a hazardous spill plan for this MA.

VII. SPECIFIC MONITORING AND EVALUATION

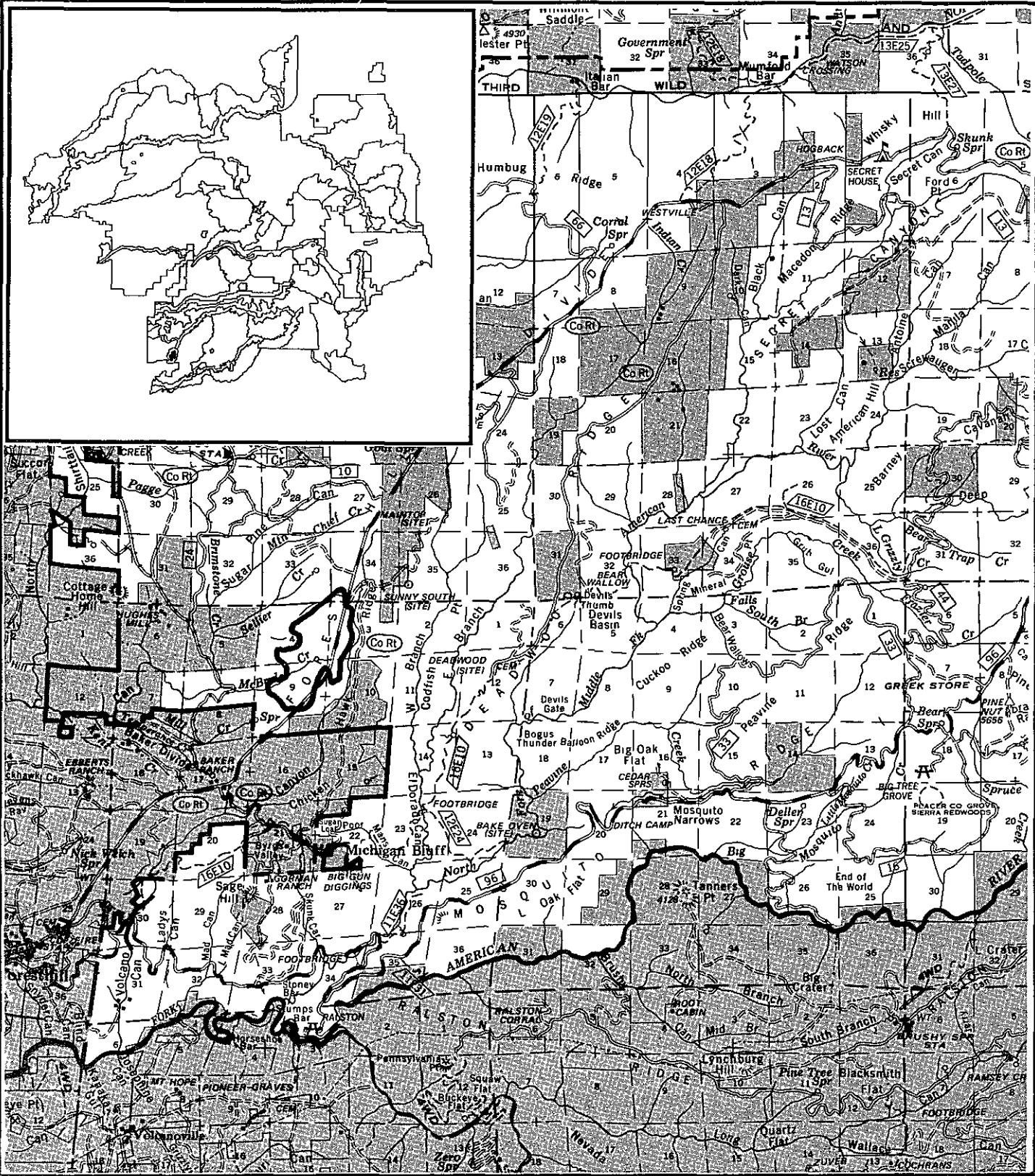
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Appendix V

MANAGEMENT AREA 064

EAST ORCHARD

T14N, R11E



064 EAST ORCHARD

639 GROSS ACRES

639 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 5 miles northeast of Foresthill on the Foresthill Divide Road. It is bounded by Volcano Canyon on the east and McBride and Seller Creek drainages on the west. Elevation ranges from 3,800 to 4,300 feet. Slopes range from flat to 10 percent, except for the steeper portions that drop into Volcano Canyon. The entire area was burned over in the 1960 Volcano Fire. Following the fire, a seed orchard and progeny test area were established.

The major features of the MA are white fir, sugar pine, Douglas-fir, and redfir seed orchards totaling 200 acres. Also included are ponderosa and sugar pine clone banks, giant sequoia studies, and a 50-acre progeny test site. Surrounding the seed orchard and progeny test site are ponderosa pine plantations established after the 1960 Volcano Fire (see MA 103).

There are no wetlands present. There are 639 acres of unsuitable productive forest land.

There are no selected wildlife emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Potential for mineral entry is a concern since the present withdrawal does not include all of the developed area.

Protection of seed trees and study trees from Christmas tree theft is a concern, as is vandalism and theft of capital improvements. There is a concern that existing facilities and improvements do not conform to visual objectives of the remainder of the Foresthill Divide Road.

Opportunities exist for providing public information and demonstrations of forest genetics, levels of growing stock, and other silvicultural practices. Opportunities also exist for conducting genetic or silvicultural studies in areas not included in seed orchards.

III. RESOURCE MANAGEMENT EMPHASIS

Tree improvement is the major management emphasis. See the Pacific Southwest Regional Tree Improvement Master Plan for specific management direction. This area is unsuited for regulated timber production.

Develop interpretive services.

Future condition will not change from present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Rural
- B. Visual Quality Objective - Modification
- C. Transportation Management Policy - Roads regulated
- D. Off-Highway Vehicle Restrictions - Closed
- E. Forestwide Standards and Guidelines - All apply except 2, 3, 24, 25, 31, 32 and 33
- F. Other - Interpretive site (A8) will be developed

V. AVAILABLE MANAGEMENT PRACTICES^{2/}

- A6 Closed OHV
- AS Developed Recreation & Interpretive Service Sites Management, Public Sector
- A11 Recreation or IS Site Construction or Rehabilitation

- E12 Tree improvement

- F4 **Soils** Resource improvement

- G1 Minerals Management - Locatables
- G2** Minerals Management - Locatable Withdrawals
- G3** Minerals Management. Leasables
- G4** Minerals Management. Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L7 FA80 Construction/Reconstruction

- P5 Fire Protection- Visual, High Use, Reservoirs. improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Mineral entry complete metes and bounds survey and apply for withdrawal as directed in the Foresthill Divide Seed Orchard. Progeny Test Area Development Plan dated 6/80, environmental assessment.

Theft and vandalism: maintain fence, protect buildings with structural design and alarm system.

Visual Quality: where possible, design structures for pleasing appearance.

VII. SPECIFIC MONITORING AND EVALUATION

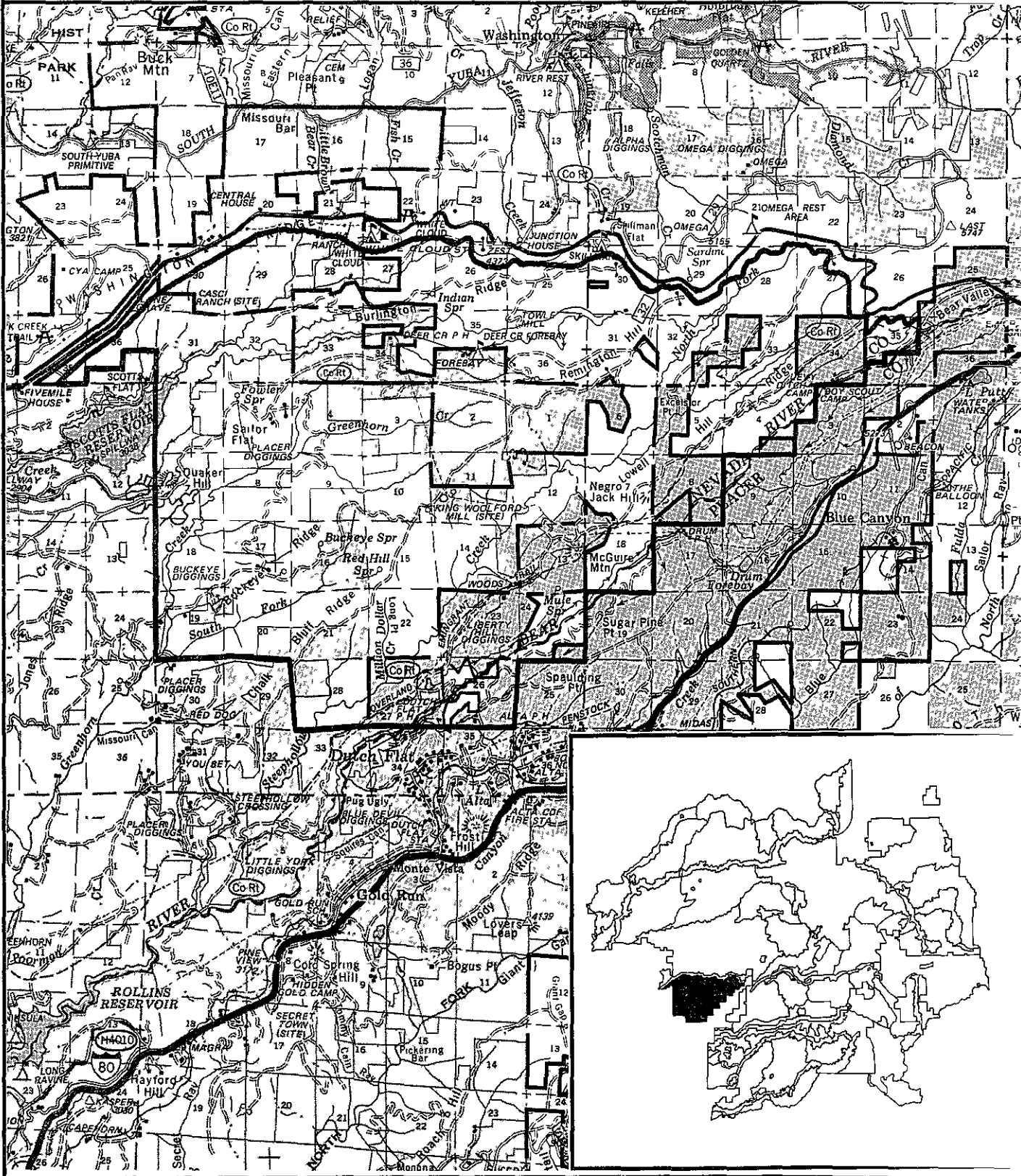
Refer to PSW Region Tree improvement Master Plan

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 065

CHALK

T16N, R10E



065 CHALK

23,550 GROSS ACRES

17,910 NFS ACRES

I. DESCRIPTION

This management area (MA) is located south of MA 61, between Highway 20 and Interstate 80 from the Forest boundary on the west to Bear Valley on the east. The area is well accessed with primary roads along Burlington Ridge, Chalk Bluff, Lowell Hill Ridge, and through the Buckeye Diggings-Fowler Springs area. The elevation ranges from approximately 2,500 feet on Greenhorn Creek to 5,200 feet on Lowell Hill Ridge near Highway 20. The south side of Lowell Hill Ridge is readily visible from the Emigrant Gap Overlook on Interstate 80.

Timber is a primary resource within the area, growing on a variety of sites. Typical mixed conifer types predominate throughout the area, black oak and canyon live oak also occur in this forest type, especially at lower elevations. Past fires, logging, and mining have resulted in extensive areas of plantations and young stands. There are 199 acres of wetlands. There are 2,163 acres of unsuitable productive forest land.

Evidence of both prehistoric and historic use of the land is common in the area. Mining and early logging activities were carried out, leaving various types of placer and hard rock workings, including hydraulic digging areas, cabins, mill sites, railroad grades, ditches, flumes, and various other artifacts. The Lowell Hill Road generally follows the route of the Overland Emigrant Trail within the area. Canals and flumes, largely dating back to hydraulic mining days, have been upgraded and are used for water distribution and power generation today. Sailor Flat Diggings continues to erode, causing stream water quality degradation.

Generally, the area has high hazard fuels that have the potential for large fires. This hazard is particularly true in the areas below 5,000 feet in elevation.

The area contains deer migration routes, holding areas, and key winter deer range, some streams are productive fisheries. Selected emphasis species for the area are deer, spotted owl, pileated woodpecker, goshawk, rainbow and brown trout, and the riparian group. Portions of SOHA's 0.1 and P-1 are in this area.

The land ownership pattern within the management area is fragmented, requiring expensive landline locations and extensive rights-of-way procurement for effective management of the National Forest System lands.

In the past several sections were included in plans for land exchange with a major timberland owner. Because of a recent ownership change, exchange appears to be less likely.

Recreational use is mainly dispersed equestrian and OHV day use. Greenhorn Creek is an area of high OHV use. Several equestrian and other competitive special events occur annually on roads and trails. A small campground operated by Pacific Gas and Electric is located on private land at Deer Creek Forebay, but it does not receive very high use.

Modern-day mining activities are found throughout the area, primarily small-scale operations.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Management is complicated by the intermingled ownership pattern. Rights-of-way problems, landline locations, and hazardous fuels caused by private land logging and an increase in private land development are part of the issue. Intermingled Federal ownership of timberlands held by the Forest Service and Bureau of Land Management creates a concern regarding economic and efficient management of Federal lands. Bear clover severely competes with conifers, inhibiting successful plantation establishment and growth.

There is a management concern to retain or improve the key winter deer range. The winter deer range on public land becomes more critical as the use of private lands become increasingly residential. A decrease in other wildlife habitat also results from private land development. This places more pressure on Forest lands to provide for wildlife habitat needs. This could conflict with timber and other resource goals if these needs are to be met. Burlington Ridge, Greenhorn Road, and Chalk Bluff-Big Tunnel Road areas are key winter deer ranges and migration corridors. Vehicle use conflicts with deer during their critical life cycles (November 1 - May 1).

The existence of a combination flume-canal system for power generation and water distribution may require special timber harvesting techniques to protect these facilities. Water quality degradation due to erosion from past incorrect road location and inappropriate mining activities is occurring.

Visual quality is a concern, particularly in the middle ground viewed from the Emigrant Gap Overlook. This concern also affects scenic resources in the middle ground. Highway 20 is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the scenic background.

There is concern that management activities could adversely affect the historical integrity of the Overland Emigrant Trail and other resources.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphases are regulated, *intensive even-age* timber management and *wildlife habitat* management (deer and spotted owls). Emphasize timber production. Near residential developments, work closely with neighbors at the project level to minimize conflicts stemming from differences in objectives. Emphasize wildlife and watershed values, especially when managing in streamside management zones and the spotted owl habitat area. Unscheduled timber harvest may be practiced on lands unsuitable for timber production such as special-use permit areas, etc.

Continue efforts to encourage Nevada County to zone this area for agricultural/forestry land uses.

Emphasize management in the middle ground of Highway 20 to maintain a predominantly natural landscape.

Manage areas in the middle ground viewed from the Emigrant Gap Overlook for long rotation, to both protect the visual quality and provide additional wildlife habitat. Emphasize opportunities to improve deer winter range through hardwood and shrub management and transportation management. Emphasize wildlife habitat projects on marginal timberland, hardwood/conifer stands, and other long-rotation areas.

Emphasize intensive fire prevention activities, especially in the urban/wildland interface. Where possible, land adjustments that will improve management efficiency while maintaining or improving critical wildlife habitat will be pursued; however, the large land exchanges proposed in the past will not be pursued.

Emphasize reclaiming eroded lands, as opportunities are available, in conjunction with timber activities, road construction, mining, and other work in the area. Also seek funding through cooperative programs to rehabilitate damaged watershed lands.

Maintain the historical integrity of the Overland Emigrant Trail.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-size stands in the mixed conifer and hardwood-conifer forest types. Manage these stands on a short rotation schedule of 50 to 120 years. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rooded natural.
- B Visual Quality Objective - Partial retention in middle ground viewed from I-80 and Highway 20. Modification for the remainder of the area. Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have herein been assigned the modification VQO.
- C Transportation Management Policy - Forestwide Standards and Guidelines.
- D Off-Highway Vehicle Restrictions - Open, except restricted in Burlington Ridge area and Greenhorn Road. November 1 to May 1. This restriction can be amended if weather conditions are such that deer are not on the winter range.
- E Forestwide Standards and Guidelines. All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- C1 Stream Fisheries - Nonstructural improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management

- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven-age Cutting Method
- E9 **Special Cutting - Urban/Rural/Wildland Interface**
- E10 **Artificial Stand Reestablishment**
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 **Precommercial Thinning**

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L6 Trail Construction/Reconstruction - Special Uses
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Retain and manage key winter deer range. Manage key winter deer range to retain or establish a forage cover mixture. Burlington Ridge area and lower Road 16N43 will have closure November 11th May 1st it is not feasible to enforce closures on Chalk Bluffs Road and provide land Resolve the inadequacy of the landline by as early as possible for land adjustment as they become available to increase efficiency of management and to improve wildlife habitat.

Reconstruct or obliterate existing roads and rehabilitate mining sites that are subject to future timber and oil projects.

Develop spotted owl management plans for SOHA's O-1 and P-1

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

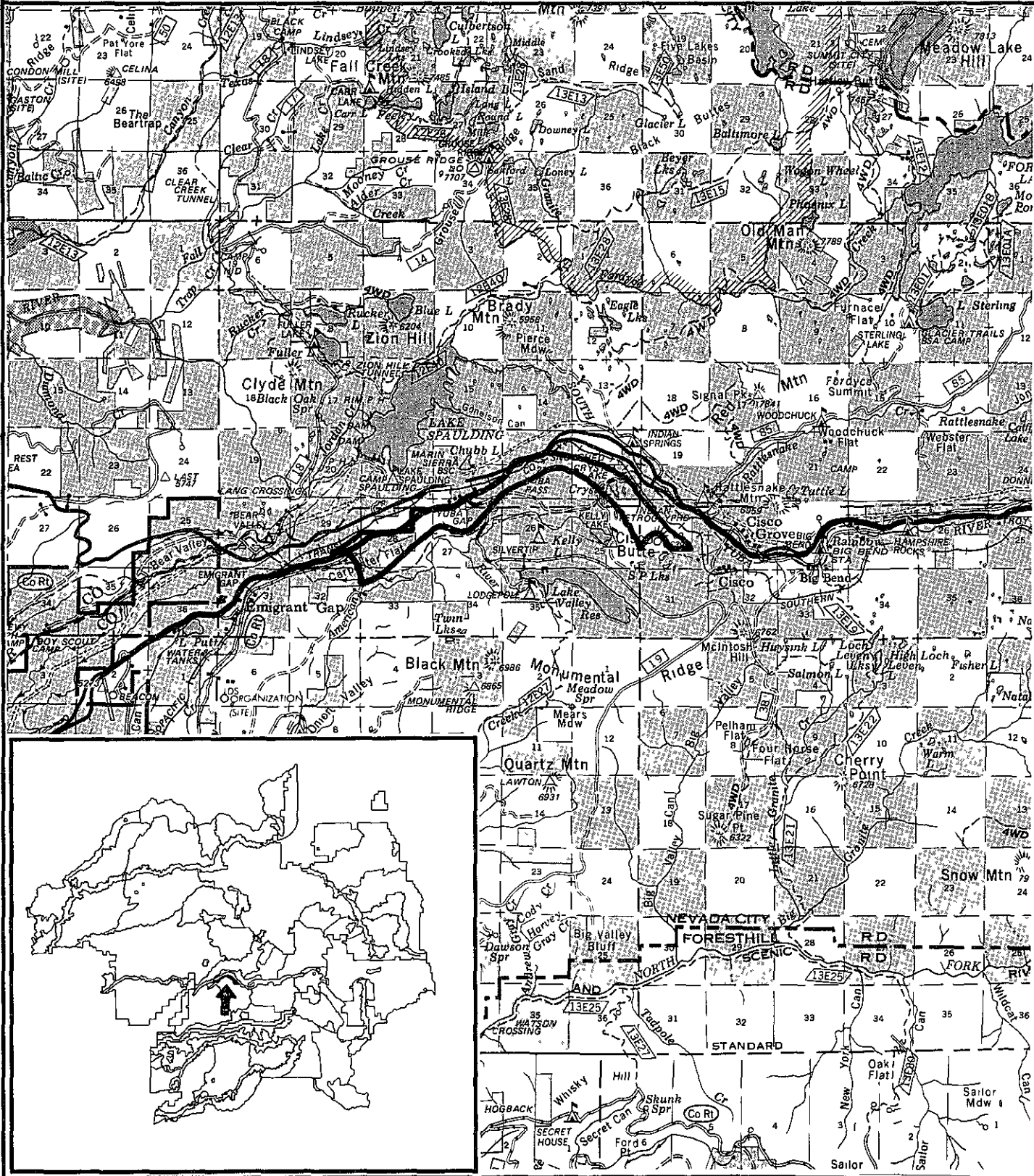
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to State Descriptions of Management Units in Chapter 1

MANAGEMENT AREA 066

YUBA GAP

T17N, R12E



066 YUBA GAP

894 GROSS ACRES

488 NFS ACRES

I. DESCRIPTION

This management (MA) is south of and visible from Interstate 80 between Carpenter Flat and Cisco Butte. Lands viewed are foreground and middleground areas, generally within one to one and-onehalf miles of the freeway

The land includes dense patches of timber, scattered timber and brush, and rocky, nearly barren mountain slopes. There are 46 acres of wetlands. There are 55 acres of unsuitable productive forest land. A portion of the Rattlesnake Sheep Allotment is within this MA.

There are no developed recreation sites and no trails in this MA.

The selected emphasis species is the riparian group.

A portion of the Overland Emigrant Trail traverses the area.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Maintenance of the visual quality of the foreground and middleground from Interstate 80 is a concern. It is included in the Master List of State Highways Eligible for Official Scenic Designation and thus requires special consideration. The cost of timber stands are increased, if on steep, rocky terrain high road development costs. Most timber management activities undertaken would not be cost effective and, if undertaken, would not be seen from the freeway.

A concern is maintaining the historic integrity of the Overland Emigrant Trail.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is visual quality. Harvest timber on an unregulated basis using special cutting practices. The desired future state of the vegetation is mixed age classes of timber and brush throughout the MA.

Maintain the historical integrity of the Overland Emigrant Trail, protect significant segments from disturbance by management activities.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural
- B Visual Quality Objective - Retention
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Open
- E Forestwide Standards and Guidelines. All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-County Skiing
- A4 Open OHV
- A9 Recreation Management (Private & Other Public Sector)
- A16 Visual Resource Travel Route Viewshed Planning

- C3** Lake Fisheries - Nonstructural Improvement and Maintenance
- C4** Lake Fisheries - Structural Improvement and Maintenance
- c5 Early Succession Vegetation Management
- C6** Midsuccession Vegetation Management
- C7** Late Seral Stage Vegetation Management
- C8** Structural Habitat Improvement and Maintenance
- C9** Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D7** Range Improvement - Nonstructural (Permanent and Transitory)
- D8** Range Improvement - Structural (Permanent and Transitory)

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2** Multiresource Road Access Development - Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailblake
- L6 Trail Construction/Reconstruction - Special Uses
- L6 Transportation Management, Roads - Open
- L9** Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated

- P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The prescription emphasizes visual quality. Timber management and other resource activities are subordinate to visual quality. Brush manipulation may be undertaken; however, limit activities to actions such as burning brush stands so that visual effects are short term. Prepare a visual resource travel route viewshed plan to identify the specific means to achieve the desired visual quality.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

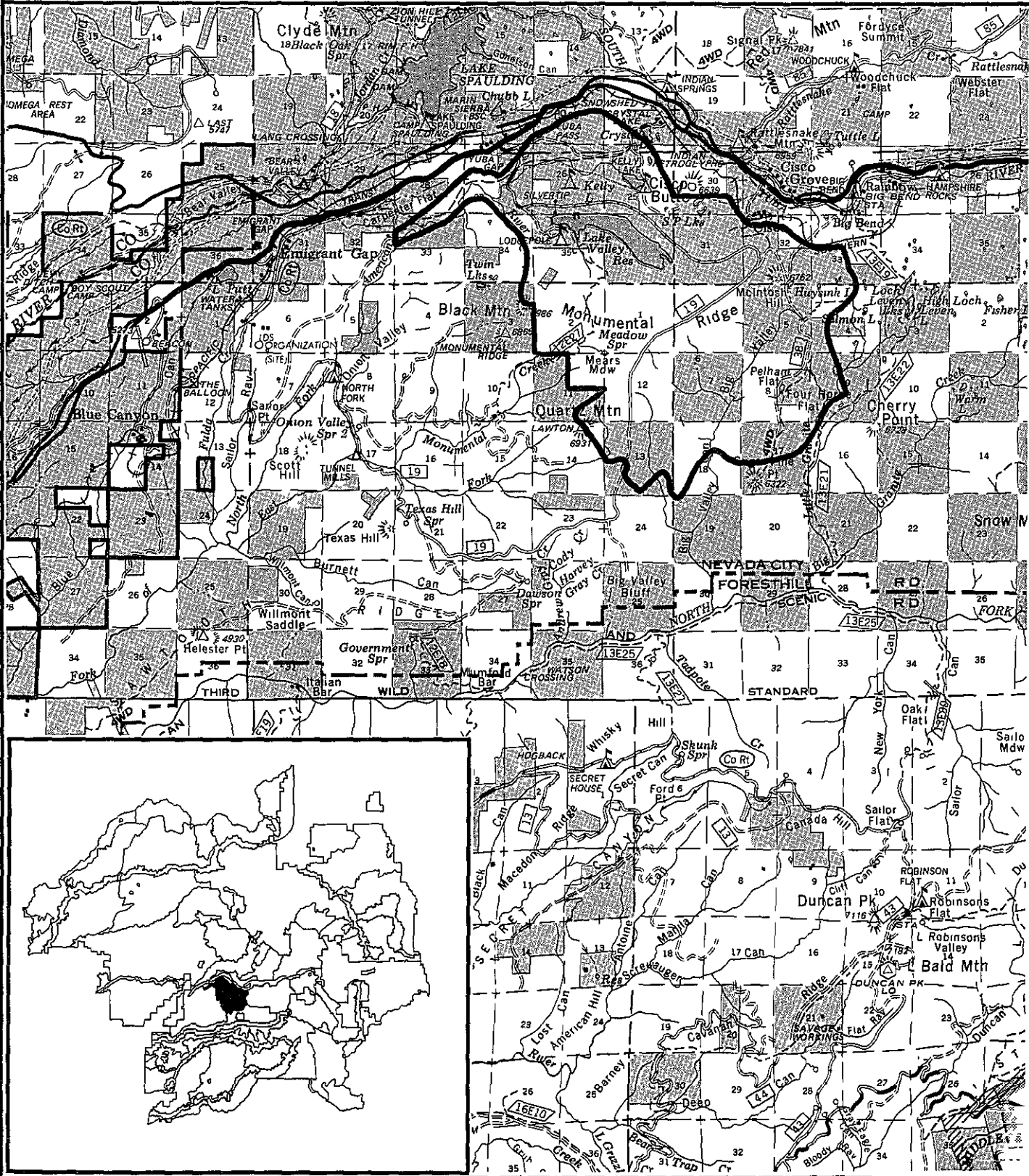
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 067

MEARS

T16N, R13E



067 MEARS

12,368 GROSS ACRES

4,755 NFS ACRES

I. DESCRIPTION

This management area (MA) is located south of Interstate 80 at Cisco Grove in the North Fork American River drainage. Elevation varies from 5,400 feet on the North Fork of the North Fork American River to 7,000 feet at Black Mountain.

Approximately one-half of the land base is privately owned, primarily by several timberland companies, PG&E, and a membership campground.

Vegetation is characterized by red fir and mixed conifer, which is heavy to white fir with interspersed wetlands, and meadows broken up by lodgepole pine stands. The area is very productive for timber, both private and National Forest System lands have been heavily logged in the past. Stocking on National Forest System lands is largely below desirable as a result of past logging. A progeny test site is located in Section 11. There are 406 acres of wetlands.

Approximately 90 percent of the area is accessed. The Mears Meadow Road is the main access.

Two trails exist on the east side of the area: the Big Granite Trail beginning in Section 8 and traveling south to the North Fork American River, and the Salmon Lake Trail beginning in Section 5 and accessing the Loch Leven area. The trails are closed to off-highway vehicle (OHV) use, however, OHV use is occurring around the Salmon Lake Trail. On the west side of the MA, the Mears Meadow Trail traverses to Lake Valley Reservoir.

Hunting is a major recreation use of the area along with hiking and horseback riding, much of which originates at a church camp and PG&E camp at Lake Valley Reservoir. Snowmobile and cross-country skiing use is increasing with the predominant use on private land around Lake Valley Reservoir, but extending into the Mears Meadow, Huysink Lake, and Pelham Flat areas.

The selected emphasis species are deer, rainbow trout, spotted owl, and the riparian group. Deer use the area as summer range. A portion of spotted owl habitat area Q-3 lies within this MA.

A portion of the Overland Emigrant Trail traverses this MA.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Due to difficulty in artificially regenerating true fir stands and the high incidence of wind damage in areas recently logged, regenerating large acreages of nonstocked and poorly stocked timberlands is a concern.

Present lack of control on OHV use around the Salmon Lake Trail is causing erosion problems.

There is an opportunity to have a jeep trail developed on the west side of the MA by a four-wheel-drive club.

Lack of adequate cover around meadows, associated fir stands, and dense lodgepole pine stands are both a concern and an opportunity for deer and grouse habitat improvement when planning future management activities. Excess roading is a concern for deer.

There is concern that management activities could adversely affect the historical integrity of the Overland Emigrant Trail.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated even-age timber management. Emphasize range management on the transitory range created by timber harvest.

Emphasize wildlife and watershed values in streamside management zones, the spotted owl habitat area, and in special wildlife habitat areas.

Unscheduled timber harvest may be practiced on lands unsuited for timber production such as special-use permit areas.

Manage dispersed recreation, both motorized and nonmotorized. Restrict OHV use in Section 4 to designated routes only due to excessive erosion and to be consistent with the management of the Loch Leven Trail system.

Emphasize aggressive initial attack and fuels manipulation in high risk areas such as roadsides, with a special prevention emphasis in recreation areas.

Maintain the historical integrity of the Overland Emigrant Trail.

The desired future condition for mixed conifer lands intensively managed for timber production consists of plantations through small sawlog-size stands of mixed conifers. Manage these stands on a short rotation schedule of about 50 to 80 years. The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation age for these stands is about 150 years. High elevation (generally above 5,500) mixed conifer stands in visually sensitive areas will be managed similarly to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on a short rotation basis. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Rooded natural.
- B. Visual Quality Objective - Modification except for partial retention for foreground of system trails, the primary roads accessing the trailheads, the railroad, and middleground of I-80.
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D. OR-Highway Vehicle Restrictions - Designated routes only. Open to over-the-snow travel.
- E. Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-country Skiing
- A3 Commercial Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation

- C1 Stream Fisheries - Nonstructural improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Rooded Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E12 Tree improvement
- E13 Release and Regeneration
- E14 Precommercial Thinning

- F1 Water Resource improvement
- F3 Flow Regime Improvement
- F4 Soils Resource Improvement

- G1 Mineral Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited
- L1 Timber Access Road Development- Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction- Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L6 Trail Construction/Reconstruction -Special Uses
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection- Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Regenerate sites using primarily the shelterwood method and small clearcuts on southeast to southwest aspects and on droughty soils. Regenerate using artificial methods where a suitable seed source does not exist or shelterwood trees are not needed. Use small stands, especially near the windward side of ridges, to reduce the effects of wind on the residual trees.

Coordinate with the four-wheel-drive club to develop a designated jeep trail and to reduce unauthorized OHV use

Enlarge meadows and string together by removing thickets of lodgepole pine. Reduce stocking levels in timber stands within riparian zones of meadows to encourage brush where needed for wildlife cover

Develop a spotted owl management plan for SOHA Q-3.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

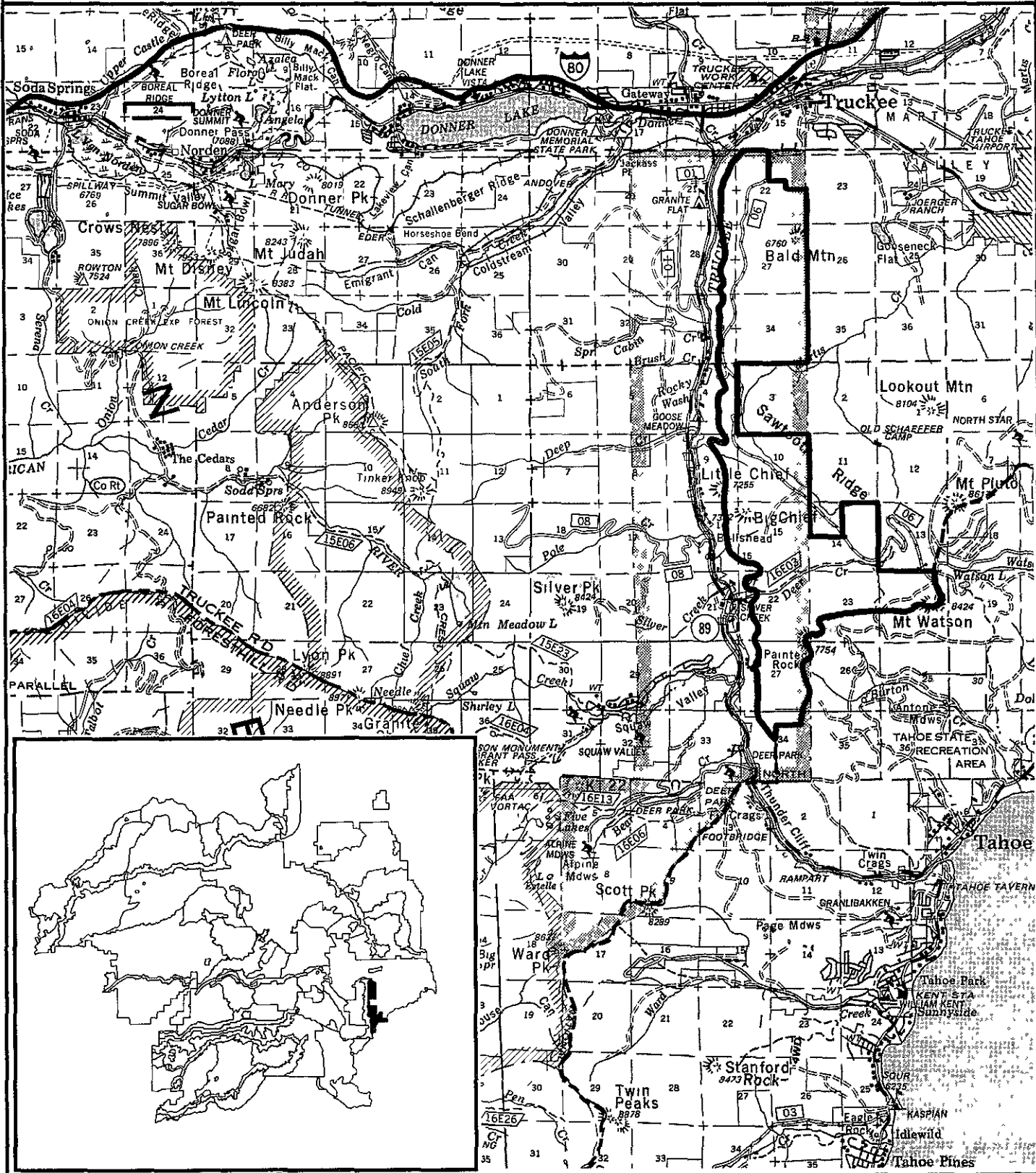
Monitor OHV use to ensure effectiveness of OHV restrictions and expected reduction in erosion

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 068

SAWTOOTH

T16N, R16E



068 SAWTOOTH

6,062 GROSS ACRES

6,062 NFS ACRES

I. DESCRIPTION

This management area (MA) is located east of the Truckee River management area (069) from the Nevada-Placer county line on the north to the Lake Tahoe Basin Management Unit on the south. Elevations range from 6,000 to 7,700 feet. Slopes are generally gentle in the north becoming steeper in the Deer Creek drainage. The area has a western aspect. The Bald Mountain Fire occurred in the 1950's and is mostly reforested. Timber harvesting has continued from the late 1800's to the present. Vegetation is predominantly mixed conifer, with true fir at the higher elevations. There are 139 acres of wetlands. There are 181 acres of unsuitable productive forest land. Dispersed recreation use by adjacent homeowners, fuelwood cutters, hunters, and winter sports enthusiasts is common in the area. A portion of the Sierra Crest Sheep Allotment is within this MA.

There is an undeveloped cinder cone at Bald Mountain. A power transmission and telephone cable cross the southern portion of the area, east to west. A snow survey course is located in Sections 22 and 27.

Many of the lands were acquired by exchange from Westside Lumber Co. in 1948. The deed from Westside Lumber Co. contained many reservations, the most significant of which are rights (now owned by Sierra Pacific Power Co.) to construct power-related facilities.

The area is bisected by a forest collector road and is well developed by local roads. The road system is also used for snowmobiling and off-track Nordic skiing in the winter.

Selected emphasis species are deer, rainbow, brown and brook trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Urban expansion is increasing, particularly on the north end of the MA in the vicinity of Ponderosa Palisades and the Martis-Woods Estates. There is local interest about log hauling through the subdivision areas because of concerns about public safety and noise. A County ordinance requires timber to be backhauled 26 miles via State Highway 267 to Truckee, increasing haul and maintenance costs.

Dispersed camping in areas adjacent to management area 69 has caused resource damage, resulting in restricting camping to developed sites and designated camping areas only.

There is a visual concern by people using Sawtooth Ridge for dispersed recreation, as well as with those living in the adjacent subdivisions, about regeneration harvest on adjacent National Forest System lands and on those middleground areas within the Deer Creek Drainage as viewed from the Pacific Crest Trail, Squaw Valley, and the Western States Trail. The visual resource concern also involves areas seen as middleground from Highway 69, a route included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation.

Some residents living adjacent to National Forest System lands within this MA have expressed concern that Forest Service management activities would alter their "green belt" that served as parks, visual screen, and open recreation areas for their neighborhood.

There is a soil erosion-productivity concern on the steep slopes within the Deer Creek drainage due to the high erosion potential. Associated with the soil erosion is the maintenance of the water quality of Deer Creek, which is used as both a domestic water source and a fishery at its confluence with the Truckee River.

The Deer Creek Trail #16E03 is presently a system trail; however, there is no right-of-way at the upper or lower segments. In addition, the private landowners have a gate across a bridge that provides access to the private land and the Deer Creek Trail. At this time, this limits trail use to only the cabin owners who have access.

Fire is a concern in the wildland/urban interface.

The Truckee-Little Truckee Rivers Land Use Plan identified the Woods-Chief Management Unit as a potential developed recreation site. Access to the area is difficult, and there is no water available. A camping/staging area has been proposed by the Western States Trail Foundation for equestrian events. A location has not been selected, but this area is under consideration, as is an area on the LTBMU.

An opportunity exists to provide fuelwood as a result of intensive forest management

An opportunity exists to provide better range and wildlife habitat through water developments and vegetation manipulation

111. **RESOURCE MANAGEMENT EMPHASIS**

The major resource emphasis is timber harvest on a regulated, long rotation (100-150 years), even-age basis. Consider range management on the transitory range opportunities created by timber harvest.

Emphasize wildlife and watershed values when managing in streamside management zones and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing recreation development sites, special-use permit areas, etc.

Emphasize dispersed recreation both winter and summer. Emphasize the development of equestrian campground/staging areas

Emphasize management in visually sensitive areas that is consistent with maintaining a predominantly natural landscape

The desired future condition in red fir and lodgepole stands is even-aged plantation through large sawlumber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention Initial VQO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on an 80-120 year rotation basis. This latter category includes approximately 593 acres. The remaining land within the management area will be similar to the present condition.

IV. **MANAGEMENT AREA STANDARDS AND GUIDELINES 1/**

- A. Recreation Opportunity Spectrum - Rooded natural.
- B. Visual Quality Objective. Partial retention as seen from the community of Truckee, the foreground and middleground along the main National Forest System roads and trails, including the Tahoe Rim Trail, the Western States Trail, Highway 89, and middleground as seen from Squaw Valley, Modification for the remainder of the MA
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply
- D. Off-Highway Vehicle Restrictions - Open
- E. Forestwide Standards and Guidelines - All apply.

V. **AVAILABLE MANAGEMENT PRACTICES 2/**

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A8 Developed Recreation & interpretive Service Sites Management, Public Sector
- A11 Recreation or IS Site Construction or Rehabilitation

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range improvement. Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method

- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E9 Special Cutting - Urban/Rural/Wildland Interface
- Et0 Artificial Stand Reestablishment
- Et1 Natural Stand Reestablishment
- E13 Release and Weeding
- E14

- Ft Water Resource Improvement
- F3 Flow Timing
- F4 Soils Resource Improvement

- Gt Minerals Management -
- G2 Minerals Management - Locatable With
- G3 Minerals Management -
- G4 Minerals Management -
- G5 Minerals Management -

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Stand Development - Road Construction/Reconstruction
- L2 Multiresource Land Use - Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterate
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Regulated Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Meet the partial retention VCO within areas of visual concern, such as along subdivision boundaries, the middleground area within the Deer Creek drainage as viewed from the Crest, Squaw Valley, the Tahoe Rim Trail, and the Western States Trail, and the middleground as seen from Highway 89

Continue to restrict camping in areas adjacent to MA 69 to developed sites and designated camping areas only as needed

It is the responsibility of developers, in consultation with county planning agencies, to provide for 'greenbelts' and parks for communities. It is not a Forest Service responsibility to provide subdivision amenities. However, the Forest Service will continue to analyze the effects of off-site impacts on adjacent lands during project level planning.

Consider the effects of the reservations in the deed from Westside Lumber Co. in project planning.

Resolve the Deer Creek Trail concern by either obtaining the necessary rights-of-way or by abandoning this trail. Develop the Western States Trail from MA 69 to the Tahoe Rim Trail.

Explore the recreation potential in the Woods Chief area in supporting equestrian use at this time.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

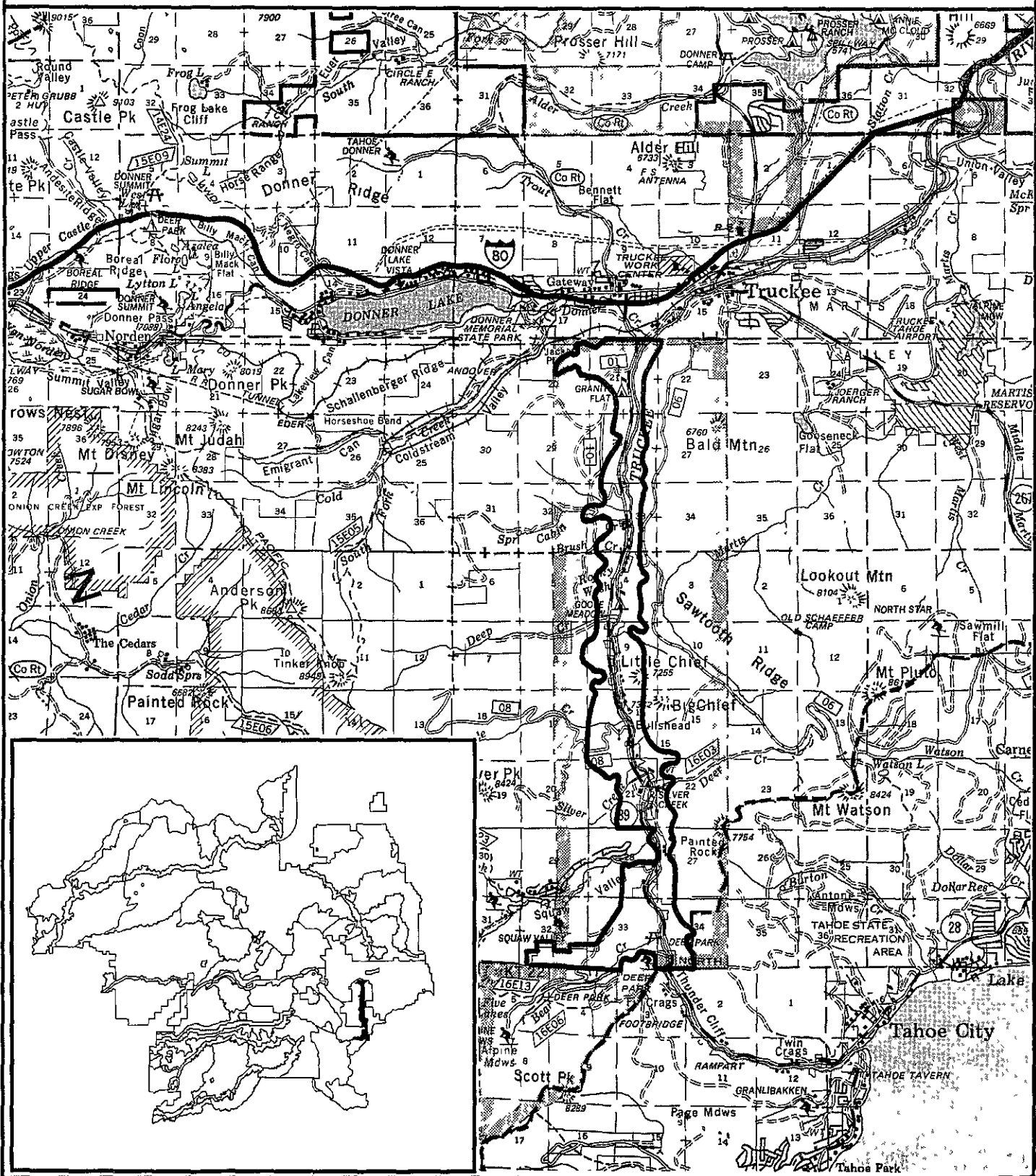
Monitor County zoning and land use regulations for coordination of County and Forestland management objectives.

1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 069

TRUCKEE RIVER

T16N, R16E



069 TRUCKEE RIVER

4,164 GROSS ACRES

3,596 NFS ACRES

I. DESCRIPTION

This management area (MA) is the Truckee River canyon located from Alpine Meadows Road to Truckee. The elevation varies from 5,800 feet on the river to 6,900 feet at the rim. This area includes the foreground viewing area along Highway 89 and the Truckee River. Existing uses within this area include three campgrounds, one picnic area, a summer home tract, several water transmission lines, a portion of the Sierra Crest Grazing Allotment, water tanks, road special-use permits, power and telephone transmission lines, and a sewer transmission line. Highway 89 is one of the primary access routes to North Lake Tahoe from Truckee and Interstate 80. Traffic frequently exceeds the designated capacity of the state highways, particularly during ski weekends.

There are many secondary roads that connect to Highway 89 throughout the area. These roads serve major development areas in the Bear and Squaw Creek Drainages. Others serve areas with a long history of timber harvest. Some snowplay occurs along the road.

Most of the lands in this MA were acquired from Westside Lumber Co. by exchange in 1948. The deed from Westside Lumber Co. contained many reservations, the most significant of which are rights (now owned by Sierra Pacific Power Co.) to construct power related facilities. Within 100-foot strips lying either side of the Truckee River, the government may not develop facilities that impede or obstruct the construction of power-related facilities. Beyond the 100-foot strips, power-related facilities may be constructed that create as little inconvenience as possible. The Bureau of Land Management has recently completed field work to reestablish the lot corners and other points of geodetic concern. A recreation acquisition plan was approved in 1980 that earmarked many of the lots for acquisition because of their intrinsic recreation values. There are many private lots along the Truckee River resulting from the subdivision of property once owned by the Truckee River Lumber Company. Many of the lots have been developed.

Numerous cultural sites exist within this area, but a complete inventory is not available.

The combination of a unique scenic river setting and easy access draws many recreationists with a wide variety of desires.

The development of a recreation facility at the mouth of Bear Creek is one of the highest priorities on the Forest.

The Western States Trail will cross State Highway 89 and the management area at Midway Bridge. A small staging area near the entrance of Squaw Valley is under consideration in support of the Western States Trail.

The vegetation consists of lodgepole pine stands on the river and mixed conifer stands on the sideslopes. Many pockets of lodgepole pine on both private and public lands are dying from insect attack. Most of these stands are located on the east side of the river. Some of the Jeffrey pine, particularly along the west-facing slope, are also dying, but from other causes. There are 232 acres of wetlands, and 1,511 acres of unsuitable productive forest land.

Several tributaries that feed into the Truckee River, including Bear, Squaw, Silver, Deep, Pole, and Deer Creeks, are fisheries. Pole Creek is a Lahontan cutthroat trout recovery stream. The selected emphasis species are rainbow and brown trout, and the riparian group.

The Pole Deep and Silver Creek watersheds, west of Highway 89, have been managed since the mid-1970's with an emphasis on off-track nordic skiing. Snowmobiling has been prohibited during that time.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Concern for the visual quality is high because of the heavy recreation use of the area, both winter and summer.

Highway 89 is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

The Truckee River watershed needs to be protected for water quality for downstream users.

Because of the many subdivision lots along the Truckee River, there is a concern over the possibility of occupancy encroachment on National Forest System land.

Strong concerns have been expressed by the residents of the Bear Creek development about the effects of the potential development of the Bear Creek Campground on their private properties and the community.

Dispersed camping, which has caused resource damage, has resulted in restricting camping to developed sites and designated camping areas only throughout the management area. There is a very high recreation use in the Truckee River corridor and on the river itself. Competition for campsites and dispersed opportunities exceeds capacities during most of the summer weekends.

There is a need to gain access to National Forest System land on the east side of the Truckee River from State Highway 89. Public access would facilitate future recreation development and management of the timber stands for visual purposes.

The maintenance of nonmotorized dispersed winter sports recreation in the Deep, Pole, and Silver Creek watersheds is an issue.

Several requests have been made by neighboring communities, like Squaw Valley and Alpine Meadows, for the use of National Forest for community service-like parks.

Some residents living adjacent to National Forest System lands within this MA have expressed concern that Forest Service management activities would alter their 'green belt' that served as parks, visual screen, and open recreation areas for their neighborhood.

Eligibility for Wild and Scenic River status has not been determined.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to develop and protect the recreation values, and to maintain the visual quality and the Truckee River watershed. The existing and proposed developed recreation sites are unsuitable for regulated timber production. Emphasize getting access across the river to manage the vegetation for recreation, health and vigor of the stands, and visual quality. Emphasize acquiring key parcels identified in the 1980 Recreation Composite Plan. Wild and Scenic river values will be protected until such time as eligibility study and suitability study, if required, are completed for the Truckee River. The River is potentially eligible for a 'scenic' or 'recreation' classification.

Continue to manage the Pole, Silver, and Deep Creek watersheds as an off-track Nordic ski area.

The desired future state is a mosaic of small even-aged stands, in a full range of ages, managed to maintain the health and vigor of the timber and visual variety. There will be an increase in capacity of developed recreation sites, rehabilitation of existing sites, and stabilized, quality, dispersed recreation areas adjacent to the river.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Rural
- B. Visual Quality Objective - Retention: partial retention within the developed sites. The sites will meet the retention VQO when viewed as middle ground from travel routes and other occupancy sites.
- C. Transportation Management Policy - Encourage mass transit by private sector development. Encourage completion of a safe bike path and pedestrian trail from River Ranch to Squaw Valley. Evaluate the benefits and costs of vehicle and pedestrian access across the Truckee River to the east. Roads that may cause sedimentation will be analyzed for surfacing or erosion control measures.
- D. Off-Highway Vehicle Restrictions - Designated routes only, except for Pole, Silver, and Deep Creek drainages, which are closed to over-the-snow vehicles.
- E. Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A5 Restricted OHV
- A6 Closed OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- A18 Visual Resource Travel Route Viewshed Planning

- C1 Stream Fishenes - Nonstructural Improvement and Maintenance
- C2** Stream Fishenes - structural Improvement and Maintenance
- C8** structural Habitat Improvement and Maintenance

- D2** Range Management - Permanent Range Type (Extensive Management)
- D5** Range Management - **Transitory** Range Type (**Extensive** Management)
- D7** Range Improvement - Nonstrudural (Permanent and Transitory)
- D8** Range Improvement - structural (Permanent and **Transitory**)

- E7 Special Cutting
- E9 Special Cutting - Urban/Rural/Wildland Interface
- E10 Artdicial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J2 Land Adjustments - Retain and Acquire

- L1** Timber ; Road ; pmer - d Construction/Reconst n
- L2** Multi resource Road Access Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - f Traffic Only
- L4 Trail **Construction/Reconstruction** - f & Equestrian Traffic Or
- L6 Trail ;struc! " - Special Uses
- L8** Transportation ; Roads - f
- L9** Transportation ;, R ; - Re d Use
- L10 T ; f tation g; ;, Roads - Closed
- L11 Transportation Management, R . Obilterated
- L12 Tr. tation M; it, T; - Open
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection - Visual, High Use, Reservoirs, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

There will be short-term trade off of VQO's in favor of long-term VQO's when recreation development and small-scale timber harvest activities take place. However, long-term enhancement of the overall experience will result. Prepare a visual resource viewshed plan to identify the specific means of achieving the desired visual quality.

Standard practices will protect water quality. Consult the Lahontan Water Quality Control Board on projects that affect water quality.

Continue to restrict camping to developed sites and designated camping areas only.

Deny requests for the use of National Forest System lands for the development of community facilities, such as regional or local parks. It is the responsibility of developers, in consultation with county planning agencies, to provide for "greenbelts" and parks for communities. It is not a Forest Service responsibility to provide subdivision amenities. However, the Forest Service will continue to analyze the effects of off-site impacts on adjacent lands during project-level planning.

When the BLM survey of the Truckee River is approved, action on occupancy encroachment will be actively taken.

Plan for rehabilitation, expansion, and new construction of developed and dispersed recreation facilities, and construct them when funds are available. Address the specific issues related to the development of the Bear Creek Campground in a site-specific, project-level environmental analysis. Pursue land acquisition to meet the needs identified in the 1980 Recreation Acquisition Composite Plan. The rehabilitation of Goose Meadows and Granite Flat will be a top priority, as funds are made available.

Conduct an eligibility study for Wild and Scenic Rivers on the Truckee River within two to three years of approval of the Forest Plan in coordination with the Lake Tahoe Basin Management Unit.

Use Pole, Silver, and Deep Creek areas for off-track Nordic skiing (all motorized vehicles excluded in winter).

Locate existing private bridges that meet Forest Service standards and pursue acquisition of rights-of-way. Develop National Forest bridges as the benefit-cost ratio indicates that it is feasible

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitor County zoning and land use regulations for coordination of County and Forest land management objectives

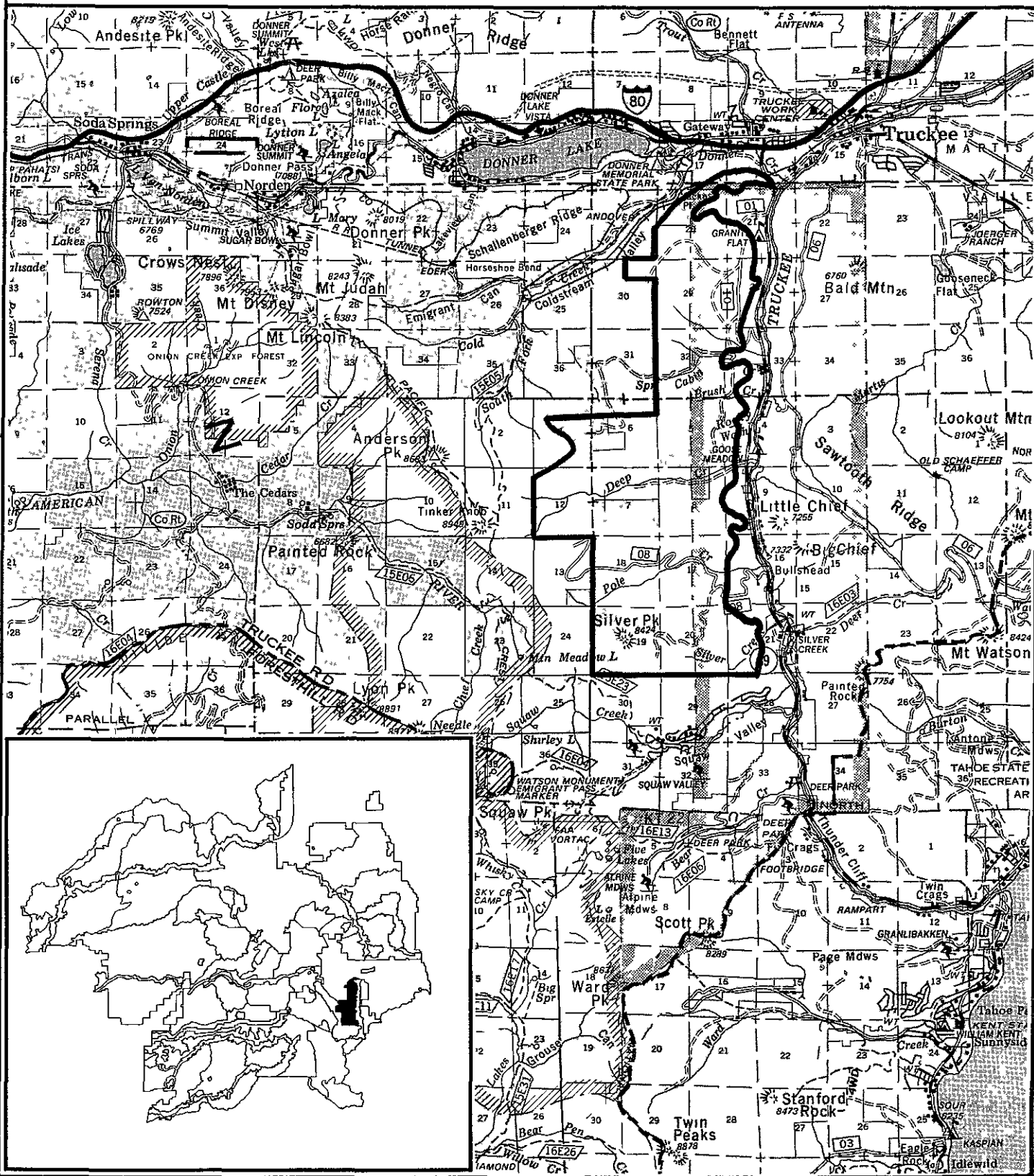
Consider the effects of reservations contained in the deed from Westside Lumber Co in any project planning, particularly when within 100 feet of the Truckee River

- 1/** Refer to **Resource** Support Element Maps and Forestwide Standards and Guidelines
- 2/** Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 070

POLE

T16N, R16E



070 POLE

9,191 GROSS ACRES

6,590 NFS ACRES

I. DESCRIPTION

This management area (MA) is between the Nevada-Placer County line on the north and Bear Creek on the south. The eastern boundary is the Truckee River management area 069. The western boundary is the Tinkers management area 071. Elevations range from 6,100 to 8,500 feet. Aspects are generally easterly. Slopes are moderate on the ridges and steep in the drainages. The Bald Mountain Fire occurred in the 1950's, the area was later reforested. Timber harvest has continued from the late 1800's to the present. Several small, historic mills were located in the drainages. Deep, Cabin, Pole, Silver, and Squaw Creeks form the principal drainages, all flowing to the Truckee River. Vegetation is predominately mixed conifer, with true fir at the higher elevations. Large brush fields are competing with conifers. There are 373 acres of wetlands. There are 2,871 acres of unsuitable productive forest land. The area is well accessed with roads that provide trails for off-track Nordic skiing and snowmobiling in the winter. Special-uses include the Placer County landfill and outfitter guide services. Private lands in Squaw Valley and Alpine Meadows are adjacent to this area.

Many of the lands in this MA were acquired from Westside Lumber Co. by exchange in 1948. The deed from Westside contained many reservations, the most significant of which are rights (now owned by Sierra Pacific Power Co.) to construct power-related facilities.

The selected emphasis species are deer, rainbow, brook and Lahontan cutthroat trout, and the riparian and meadow groups. Pole Creek is a recovery stream for the Lahontan cutthroat trout.

Some channel side slopes in Deep Creek and Pole Creek are geologically unstable. Several mass failures have occurred in Pole Creek since 1980. These streams are fed by occasional steep, riparian wetlands.

A portion of the Sierra Crest Grazing Allotment is within this area.

The Pole, Deep, and Silver Creek drainages have been managed since the mid 1970's with an emphasis on off-track Nordic skiing. In these drainages snowmobiling is prohibited.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Maintaining nonmotorized, dispersed winter sports recreation is a continuing concern. There is an opportunity to develop a new downhill ski area in the Tinker area of the MA.

A concern is maintaining resident and spawning habitat for the Lahontan cutthroat trout populations in Pole Creek, a classified recovery stream.

Potential for leachate from the Placer County landfill entering streams is a concern.

A concern is how management activity may affect the geologically unstable areas of Deep Creek and Pole Creek.

Dispersed camping in areas adjacent to management area 69 has caused resource damage, resulting in restricting camping to developed sites and designated camping areas only.

Visual quality is a critical resource management concern within this management area. This concern focuses on lands seen as middle ground from Highway 89, the roads within the management area, and heavily used roads and trails on the Sawtooth Ridge. Highway 89 is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

There are numerous wet, unstable areas in Section 12 that will limit transportation and logging system development.

An important opportunity exists to continue to provide fuelwood.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitory range created by timber harvest.

Emphasize maintaining the integrity of the Deep Creek streamside management zone (average of 100 feet, but to be determined on the ground) to protect water quality and soil resources. The sensitivity of the soil stability in the south 1/2 of Section 12 is critical. Consider the use of non-traditional logging methods.

Protection of Lahontan cutthroat trout in Pole Creek will be emphasized.

Emphasize continued off-track nordic skiing within the Pole, Silver, and Deep Creek drainages.

Emphasize wildlife and watershed values when managing in streamside management zones and where threatened and endangered species' habitats occur. Emphasize management in visually sensitive areas that maintains a predominantly natural landscape. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing and potential recreation development sites, special-use permit areas, etc.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-size stands of the mixed conifer type. Manage these stands on a rotation schedule of 80 to 120 years. The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention initial VQO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on a short rotation basis. This latter category includes approximately 1,721 acres. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A.** Recreation Opportunity Spectrum - Roaded natural
- B.** Visual Quality Objective- Partial retention for the foreground and middle ground views as seen from Highway 89, the Placer County Road to the landfill, Pole Creek Road, and the community of Truckee. Modification for the rest of the area.
- C.** Transportation Management Policy - Forestwide Standards and Guidelines apply
- D.** Mf-Highway Vehicle Restrictions- Designated routes only summer, open over-the-snow except in the Deep, Silver, and Pole Creek drainages, where it is closed to over-the-snow
- E.** Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1** Nordic Cross-Country Skiing
- A4** Open OHV
- A5** Restricted OHV
- A6** Closed OHV
- A8** Developed Recreation & Interpretive Service Sites Management, Public Sector
- A11** Recreation or IS Site Construction or Rehabilitation

- C1** Stream Fisheries - Nonstructural improvement and Maintenance
- c2** Stream Fisheries - Structural Improvement and Maintenance
- C5** Early Succession Vegetation Management
- C6** Mid-succession Vegetation Management
- c7** Late Seral Stage Vegetation Management
- C8** Structural Habitat Improvement and Maintenance

- D2** Range Management - Permanent Range Type (Extensive Management)
- D5** Range Management - Transitory Range Type (Extensive Management)
- D7** Range Improvement - Nonstructural (Permanent and Transitory)
- D8** Range improvement - Structural (Permanent and Transitory)

- E1** Clearcut Cutting Method
- E2** Seed Step Cutting Method
- E3** Overstory Removal Cutting Method
- E4** Intermediate Cutting - Existing Stands
- E5** Commercial Thinning - Regenerated Stands
- E6** Seed Tree Cutting Method

- E7 Special Cutting
- E8 Uneven-Aged Management
- E9 Special Cutting - Urban/Rural/Wildland Interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F3 Flow Timing Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management- Locatables
- G2 Minerals Management- Locatable Withdrawals
- G3 Minerals Management. Leasables
- G4 Minerals Management- Leasable Withdrawals
- G5 Minerals Management- Saleables

- J1 Land Adjustments- Retain and Acquire

- L1 Timber Access Road Development- Road Construction/Reconstruction
- L2 Multiresource Road Access Development- Road Construction/Reconstruction
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction- Foot, Equestrian and Trailbike
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection- Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Protect Lahontan cutthroat trout spawning habitat and fish passage in the Pole Creek drainage

Avoidance or special mitigation measures will be necessary in or near geologically unstable areas in Deep Creek and Pole Creek and also the steep riparian wetlands that are tributary to these streams

Continue to restrict camping near management area 69 to developed sites and designated camping areas only

Use the Pole, Silver, and Deep Creek areas for off-track Nordic skiing (over-the-snow vehicles excluded)

Use the fuelwood program to maintain the health and vigor of the timber stands and provide fuelwood opportunities

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Monitoring of leachate from the Placer County Landfill is being done by the Lahontan Water Quality Board.

Monitor Lahontan cutthroat trout habitat and populations

Monitor the mass soil failures in Pole Creek

Consider the effects of the reservations contained in the deed from Westside Lumber Co. in any project planning

The partial retention VQO established for visually sensitive areas ensures that scenic quality is retained

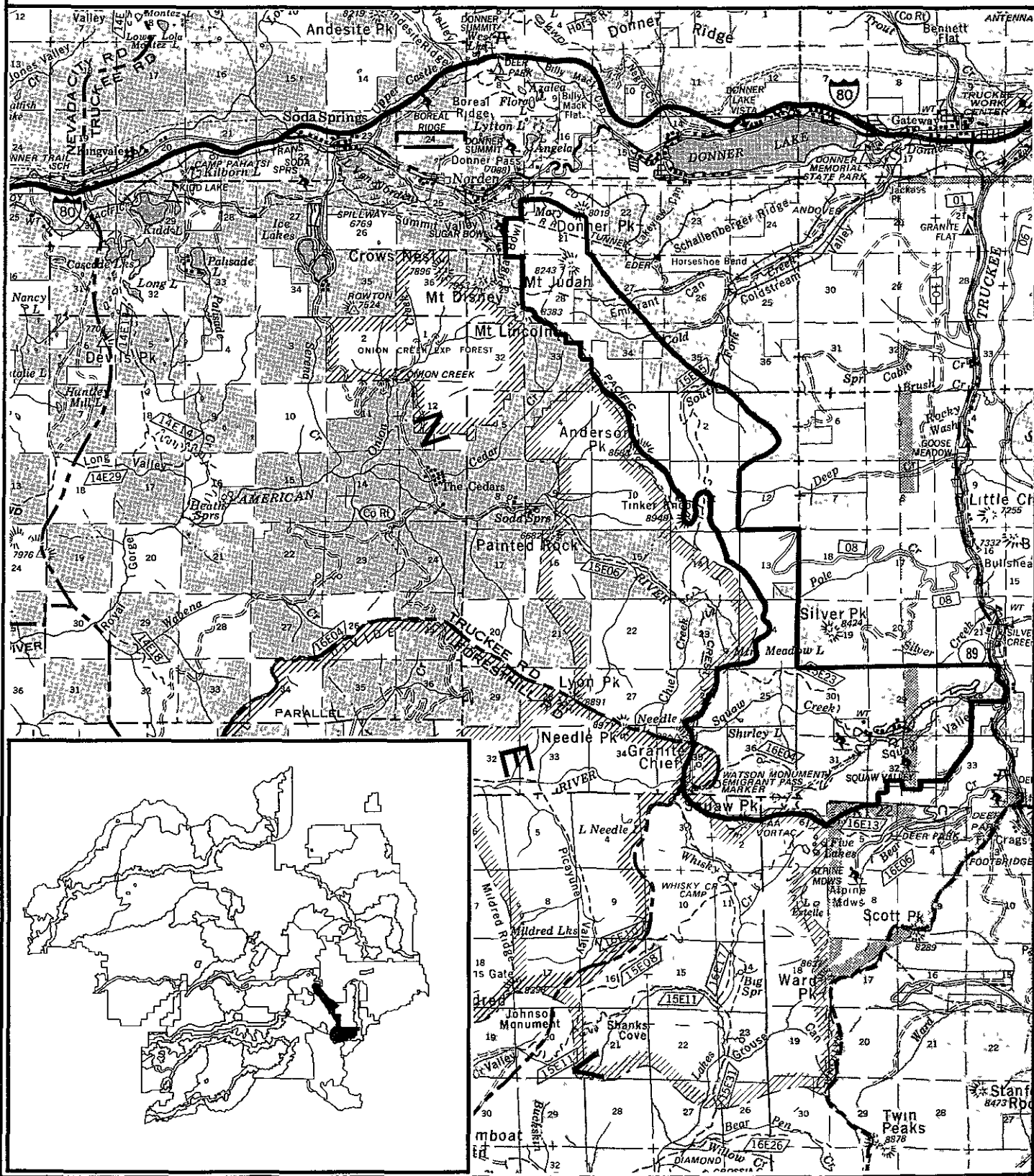
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Section V

MANAGEMENT AREA 071

TINKERS

T16N, R15E



071 TINKERS

10,290 GROSS ACRES

3,847 NFS ACRES

I. DESCRIPTION

This management area (MA) is located along the Sierra Nevada crest from Squaw Peak to Donner Peak. It includes the prominent landmarks of Granite Chief mountain, Silver Peak, Tinker Knob, Mt. Anderson, Mt. Lincoln, Mt. Judah, and Donner Peak. The intensively developed private property in Squaw Valley is within this MA.

The terrain is gentle to moderate at the lower elevations, becoming rugged at the higher elevations. Rock outcroppings are common and extensive with impressive formations. Soils are fragile, shallow, and rocky. Vegetation is sparse at the higher elevations. This area at lower elevations is vegetated mostly with mixed conifer and red fir stands. There are 277 acres of wetlands, and 3,101 acres of unsuitable productive forest land. Some adjacent private lands have been extensively logged, and several logging roads and jeep trails exist within the area. The Pacific Crest Trail bisects the area north to south and the Western States Trail crosses the area east to west.

The Overland Emigrant Trail, aka Emigrant Trail, Truckee Route of the Oregon/California Trail, or Donner Trail, crosses this management area.

Most of the MA is within the Sierra Crest Range Allotment.

The MA includes portions of the Sugar Bowl Ski Area which is under special-use permit. Sugar Bowl Ski Area has a capacity of 3,000 skiers daily. Use is restricted by existing available parking along old Highway 40. The ski area depends upon the communities of Truckee and Soda Springs for the necessary support services. Squaw Valley Ski Area, located almost entirely on private land, is also in this MA. Squaw Valley Ski Area has a potential buildout capacity of 18,000 skiers daily. This area depends on Truckee and Lake Tahoe for support services.

Tahoe National Forest lands on the east slope of the crest from Donner Peak south to Tinker Knob has been proposed as a potential downhill ski area (Coldstream). This land has characteristics that make it capable of being developed for downhill skiing. The area has a high probability of high avalanche danger, which could impose severe limitations on both avalanche control and on design of the facilities. The land from Tinker Knob to Silver Peak includes additional potential downhill skiing terrain.

Over the years, the Coldstream ski area development proposal has been surfaced by different developers. The purchase of key parcels by an individual who is not interested in development at this time, has at least temporarily put that development to rest. There is potential for a minor expansion by Sugar Bowl, as part of a retrofit of that ski area, into the upper reaches of Coldstream Canyon near Mt. Lincoln and Mt. Judah.

The Sierra Club manages Benson Hut near Mt. Anderson, under special-use permit, for use as a backcountry shelter.

Squaw Valley Ski Corporation has a 'ski slope' special-use permit for National Forest System lands adjacent to their lands. Some of this terrain is in the Five Lakes Creek drainage but not within the Granite Chief Wilderness. Squaw Valley Ski Corporation expressed a desire to develop the downhill ski potential of additional lands within this MA. These proposed developments involve land immediately adjacent to the existing private land holdings. They have expressed an interest in the development of ski trails in Sections 26, 35 (near Granite Chief Mountain), and 30 (in lower Shirley Canyon).

Section 30 is a semi-primitive, nonmotorized area that could be easily impacted by ski development.

The area contains some key fawning habitat. Selected emphasis species are deer, Lahontan cutthroat and rainbow trout, and the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The Coldstream-Tinker Knob and Silver Peak areas have a potential capacity of 6,000 and 5,000 skiers at one time, respectively. Access to these sites, however, is restricted through mixed property ownership and difficult road alignments. Expansion by Sugar Bowl to the east of Mt. Lincoln and Mt. Judah could be developed without additional roads being built.

Interstate 80 is at or near capacity during peak winter weekends. The California Department of Transportation has expressed concern over the increase in ski area capacities in the Truckee and North Lake Tahoe area.

Many of the potential off-site impacts associated with the proposed development of a major resort (traffic, utility, employee housing, and other infrastructure issues) would occur in Nevada County while the project itself would be located in Placer County. Visual impacts of new ski area development or expansion is a concern.

Visual resource concerns focus on lands seen as middle ground from Interstate 80 and Highway 89. These highways are included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus require special consideration to preserve the character of their scenic backdrops.

There is concern that evidence of the historic Overland Emigrant Trail could be damaged by recreation or non-recreation management activities.

National Forest Service Direction (FSM 2340) prohibits new downhill ski development on National Forest System lands when facility protection is dependent upon military ordinance for avalanche control. Some of the proposed expansions/new developments have a high probability of high avalanche danger in some areas. Squaw Valley Ski Corporation desires approval to install additional lifts serving Shirley Canyon. This is a concern for many locals who wish to see the primitive setting protected, particularly, Lower Shirley Canyon.

The concerns center around the perception that tree removal and slope grading necessary to develop a proposed return trail for skiers would damage the on-site amenity values of the Canyon. Lower Shirley Canyon is a relatively untouched area with unique and scenic qualities. It is considered additionally unique in the sense that these values can be experienced within a few minutes walk from the highly urbanized environment of the Squaw Valley base area.

In the 1983 General Plan Amendment for the Squaw Valley portion of Placer County, the County adapted goals for the Canyon that reflect a recognition of the value of the primitive environment of Lower Shirley Canyon and the value of that sort of environment to the Valley.

Off-track Nordic skiers have expressed concern that new downhill ski developments may consume terrain traditionally used by Nordic skiers.

There is an opportunity to improve off-track nordic skiing by acquiring a right-of-way along the crest.

Use of mountain bikes along the Pacific Crest Trail has caused conflicts with traditional trail users, violations of wilderness restrictions, conflicts with downhill ski developments, and trespass situations.

There is an opportunity to improve the fawning habitat.

The Western States Trail (WST) has received extensive public support for classification within the National Trails System. The WST will be designated a National Recreation Trail when rights-of-way have been acquired.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is for continued operation and wise expansion of the existing ski areas, where such expansion would be environmentally sound. Coordinate any planning and analysis for expansion with State and local agencies who may be required to provide such support services. Any analysis for expansion of skiing will consider community resources and services. Maintenance of visual quality will be emphasized in any ski area expansion or development. Runs and facilities will be subordinate to the natural landscape. This management area is unsuited for timber management.

Consider ski resort planning to allow expansion of the Squaw Valley Resort within upper Shirley Canyon. Emphasize non-commercial use of Lower Shirley Canyon, restricting downhill ski development to those activities that are compatible with the protection of the inherent amenity values. Incidental tree cutting to allow skiing may be considered only after detailed on-site analysis. Slope grading will not be considered compatible.

Manage the area between Squaw Valley and Sugar Bowl's proposed expansions for dispersed recreation, similar to MA 70, Pole.

The desired result will be a near-natural appearing landscape with increased development of support facilities in coordination with development of adjacent rural communities. Lower Shirley Canyon will be maintained as a retreat for the near-urban environment of Squaw Valley.

Identify and maintain the historical evidence of the Overland Emigrant Trail. Cooperate with the National Park Service in their study to include this trail into the National Historic Trail System.

A management plan for the Western States Trail will be developed during plan implementation. The Western States Trail will be established as a National Recreation Trail when rights-of-way have been obtained. In the interim, management activities are designed in a manner that will not preclude designation and will maintain the overall character of the Trail.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Rural for Squaw Valley, **rural** for Sugar Bowl and Upper Coldstream Canyon, semi-primitive nonmotorized for Lower Shirley Canyon, roaded natural for the balance of the area
- B Visual Quality Objective - Meet partial retention within the developed sites and also meet the partial retention VQO when viewed as middle ground from travel routes and other occupancy sites Meet modification for downhill skiing base facilities Partial retention for the remainder of the area, including ski slopes.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Off-Road Vehicle Restrictions - Designated routes only, summer Winter open over-the-snow, except in developed ski resorts where it is closed Closed to over-the-snow in the Pole, Deep, and Silver Creek drainages
- E Forestwide Standards and Guidelines - All apply.
- F Other - Project-type environmental analysis will be needed for each ski expansion proposal

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A6 Closed OHV
- A7 Mountain Bike Use
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A10 Downhill Skiing
- A11 Recreation or IS Site Construction or Rehabilitation
- A12 Downhill Skiing Planning, ES/EA, Development
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multi Road / Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L6 Trail Construction/Reconstruction - Special Uses
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transport Management - Restricted Use
- L11 Transport Management - Open
- L13 Transportation Management - Trails - Restricted Use

L14 Pacific Crest National Scenic Trail Management

P2 Fire Protection- High Country Noncontinuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Although the Forest Plan will be revised in 10-15 years, we expect *that* the lands allocated currently for winter sports at Sugar Bowl and Squaw Valley will continue well beyond the initial Plan period

Address the specific issues relating to Intensity of development for alpine ski area development in site-specific, project-level environmental analyses

Protect the amenity values in Lower Shirley Canyon

Restrict the use of mountain bikes on the PCT throughout the MA

Harvest timber to meet ski area management goals

The partial retention VQC ensures that a predominantly natural landscape is maintained

Improve the fawning habitat

Consider the route of the Overland Emigrant Trail to be that which has been identified by Charles Graydon in 'The Overland Emigrant Trail Through The Tahoe National Forest' until more refined evidence is disclosed

VII. SPECIFIC MONITORING AND EVALUATION

None

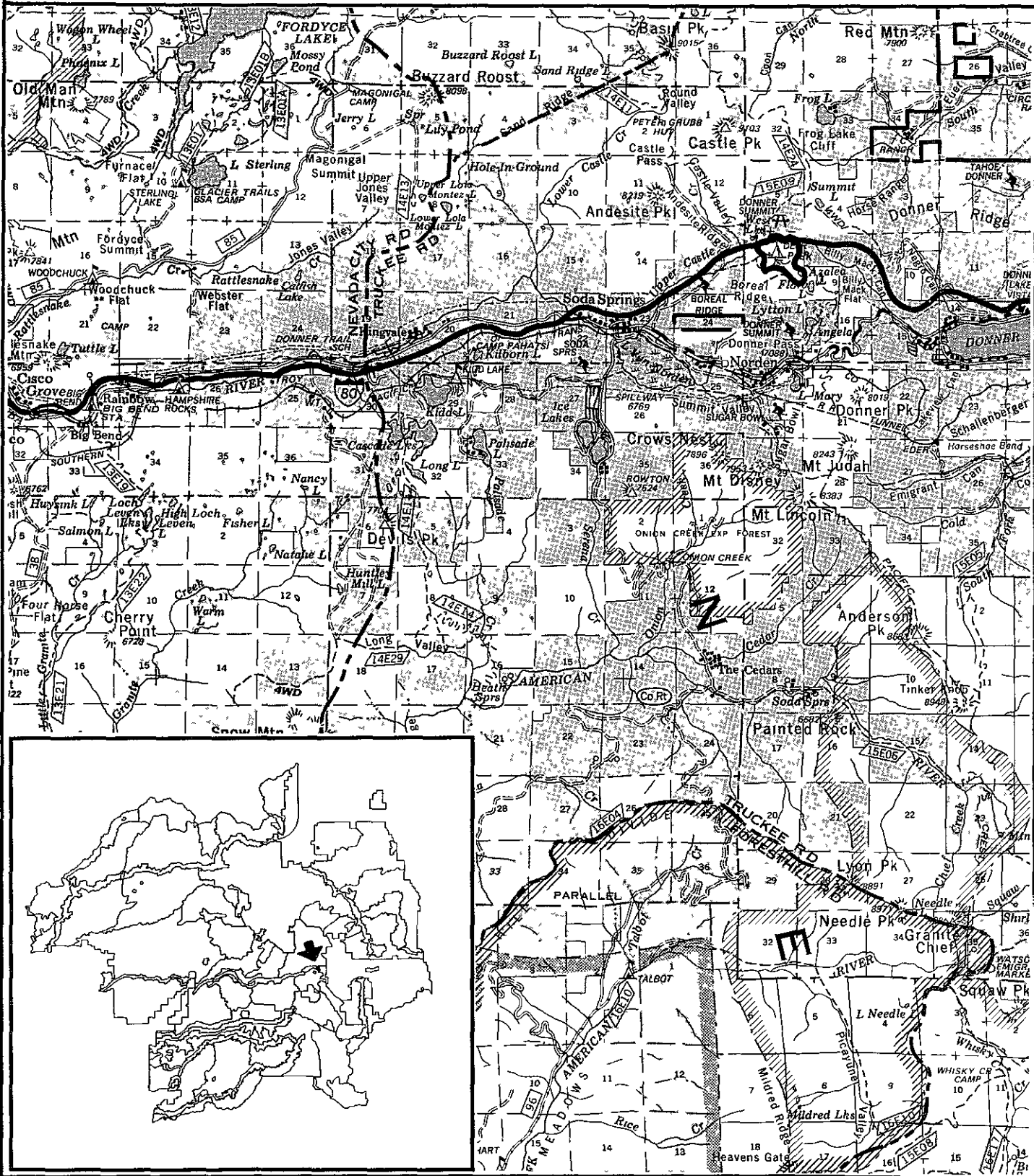
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Appendix

MANAGEMENT AREA 072

GLACIER MEADOWS

T17N, R15E



072 GLACIER MEADOWS

84 GROSS ACRES

84 NFS ACRES

I. DESCRIPTION

This management area (MA) is located south of Interstate 80 on Donner Summit. It is composed of a distinctive and unusual glacial landscape of soil and rock. The glacier is said to be large and to have been on the glacier treated 10,000 years ago. Interspersed are 22 acres of forest. There are 68 acres of forest available for and

This management area is classified as the Glacier Meadows Area (SIA).

There are no roads in the area, although most of the area is seen from I-80. Three trails cross through the MA. One is the Pacific Crest Trail, one is an interpretive trail referencing the glaciated landscape, and the third connects the Pacific Crest Trail to the recently built Donner Summit Pacific Crest Trail Trailhead, which lies west of the unit.

There are visitor information opportunities to interpret this unique landscape to visitors from the Caltrans rest stop adjacent to the heavily traveled I-80.

The selected emphasis species are brook trout and the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

A management concern is to inventory and protect Special Interest Areas containing geologic, ecologic, or cultural features. The Glacier Meadows area was previously identified as having outstanding and unique geologic features. No previous geologic areas have been classified on the Tahoe National Forest. Glacier Meadows appears to be qualified for designation as a Geologic Area under 36 CFR 294.1.

The MA encompasses a portion of the Lake Azalea watershed. The lake is the headwaters for a domestic water supply for the Donner Summit service area.

Visual quality is a resource management concern within this management area. This concern focuses on lands seen from Interstate 80. This highway is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to protect the geologic features. Through procedures outlined in FSM 2361 and pursuant to 36 CFR 294.1(a), the MA will be studied to determine an exact boundary location and included in the Implementation Plan. The area is considered unsuitable for regulated timber production.

The management emphasis of protecting geologic features also serves to preserve the natural scenic quality.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive nonmotorized
- B Visual Quality Objective - Preservation
- C Transportation Management Policy - No roads permitted
- D Off-Highway Vehicle Restrictions - Closed
- E Forestwide Standards and Guidelines. All apply except 25, 26, and 31

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A6 Closed OHV
- A15 Special Interest Area Investigations and Management

- D2 Range Management - Permanent Range (Extensive Management)

- G2 Minerals Management - Locatable Withdrawals
- G4 Minerals Management - Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L13 Transportation Management, Trails - Restricted Use
- L14 Pacific Crest National Scenic Trail Management

- P5 Fire Protection - Visual, High Use, Reservoir, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

This MA is classified as the Glacier Meadows Geologic Area pursuant to Title 36 CFR 294.1(a) and the authority vested in the Regional Forester by the Chief, Forest Service

After field evaluation is made, map the boundaries of the Glacier Meadows Geologic Area and include them in the Implementation Plan for the Geologic Area. Allocate those portions of the MA not included in the Geologic Area to management area 056 (Oonner Pass).

Protect and preserve the unique features of this MA. Plan appropriate visitor interpretive services in cooperation with Caltrans. Cooperate with universities for research and study of the area.

Prohibit roads or overnight recreation facilities in this MA.

The preservation VQO ensures that a totally natural landscape is retained.

The watershed concern is fully satisfied by this resolution.

VII. SPECIFIC MONITORING AND EVALUATION

Forest Service and research institutions may monitor for research purposes.

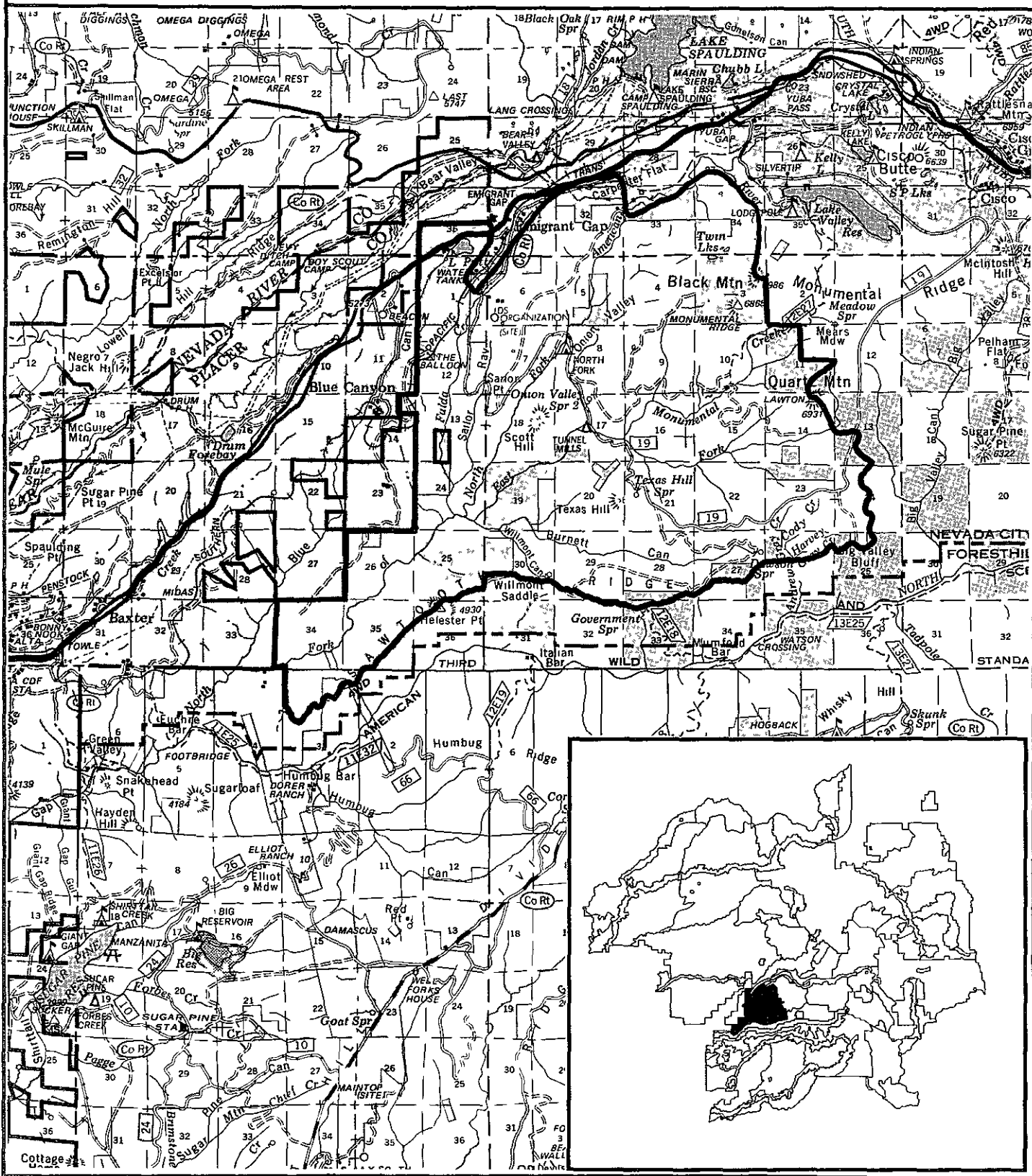
Monitor recreation use to determine disturbance to the area.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 073

MONUMENTAL

T16N, R12E



073 MONUMENTAL

23,476 GROSS ACRES

17,125 NFS ACRES

I. DESCRIPTION

This management area (MA) is in the North Fork of the North Fork American River drainage south of Interstate 80 near Emigrant Gap. The elevation varies from 2,200 feet on the North Fork of the North Fork American River to 7,000 feet at Black Mountain. The area was extensively railroad logged around the turn of the century. A portion of the Overland Emigrant Trail traverses the area. The area west of Helester Point is steep and rocky with isolated stringers of timber that are not economically accessible. The remainder of the management area consists of productive timberland with forest survey site classes of 3, 4, and 5 predominating. Mixed conifer stands, including hardwoods, predominate. Pure stands of hardwoods also occur. Past fires, logging, and mining have resulted in extensive areas of young stands and plantations. There are 295 acres of wetlands and 2,099 acres of unsuitable productive forest land. Approximately 80 percent of the MA is accessed. There are two public campgrounds (North Fork and Tunnel Mills), one organizational camp, a river overlook at Big Valley Bluff, and an access road leading to a trailhead for the North Fork American Wild River (Mumford Bar Trail in MA 81). The Texas Hill Road from Emigrant Gap to Tunnel Mill Campground receives significant recreation use. OHV use is an important dispersed recreation activity along with primitive camping in Onion Valley and adjacent to streams. Areas seen from Interstate 80 and the railroad are visually sensitive.

The natural and activity fuels profile combined with topography and elevation create a high fire hazard condition in the area mainly west of the Texas Hill Road.

A major deer migration corridor goes through the area. The selected emphasis species are deer, spotted owl, pileated woodpecker, goshawk, rainbow and brown trout, and the riparian and meadows groups. Portions of SOHA's Q-1, Q-2, and Q-3 are in this MA. Watersheds are predominately stable with high water quality and good fisheries.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Continued high level wood fiber production, including fuelwood opportunities in the precommercial size material, are major management concerns, especially in areas near residential developments. The low sites will create some regeneration problems, particularly on slopes with south to west aspects. Bearclover is a severe competitor in conifer plantations below 4500 feet.

Opportunities exist through timber management activities to reduce fire hazard and to improve deer habitat by changing the distribution and size class of the timber and rearranging the fuel profile.

There is an opportunity to improve the overlook at Big Valley Bluff, with a view of the North Fork American Wild River to the south.

There is concern that management activities could adversely affect the historical integrity of the Overland Emigrant Trail.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Near residential areas, work closely with neighbors to minimize conflicts at the project level.

Emphasize wildlife and watershed values when managing in streamside management zones and spotted owl habitat areas. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing recreation development sites, special-use permit areas, etc.

Maintain the historical integrity of the Overland Emigrant Trail.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-size stands of the mixed conifer type. Manage these stands on a short rotation schedule of 50 to 120 years. The desired future condition in lodgepole stands is plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas will be similar in condition to the lodgepole stands. The remaining high elevation conifer stands will be managed on a short rotation basis. This latter category includes approximately 2,760 acres. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural ■
- B Visual Quality Objective. Partial retention for foreground as viewed from the railroad and Texas Hill Road, from Emigrant Gap to Big Valley Bluff, and areas viewed from I-80 Modification for remainder of area Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have herein been assigned the modification VQO
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Open
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven-Age and Urban Wildland Interface
- E9 Special Cutting - Urban/Rural/Wildland interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F3 Flow Timing Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals

- J2 Land Adjustment - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Manage hardwoods for mast production to improve deer habitat

Use timber and wildlife management activities to alter the fuel profile

Manage areas seen from I-80 and Texas Hill Road on a long rotation because they are visually sensitive

Develop spotted owl management plans for SOHA's Q-1, Q2, and RS-13.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

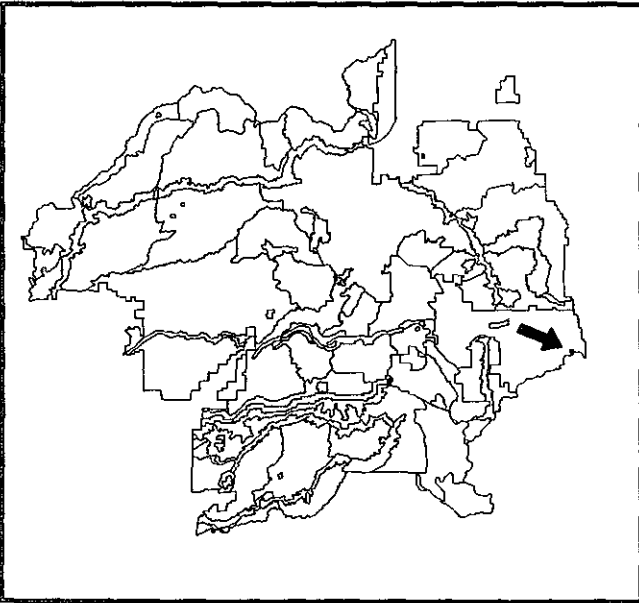
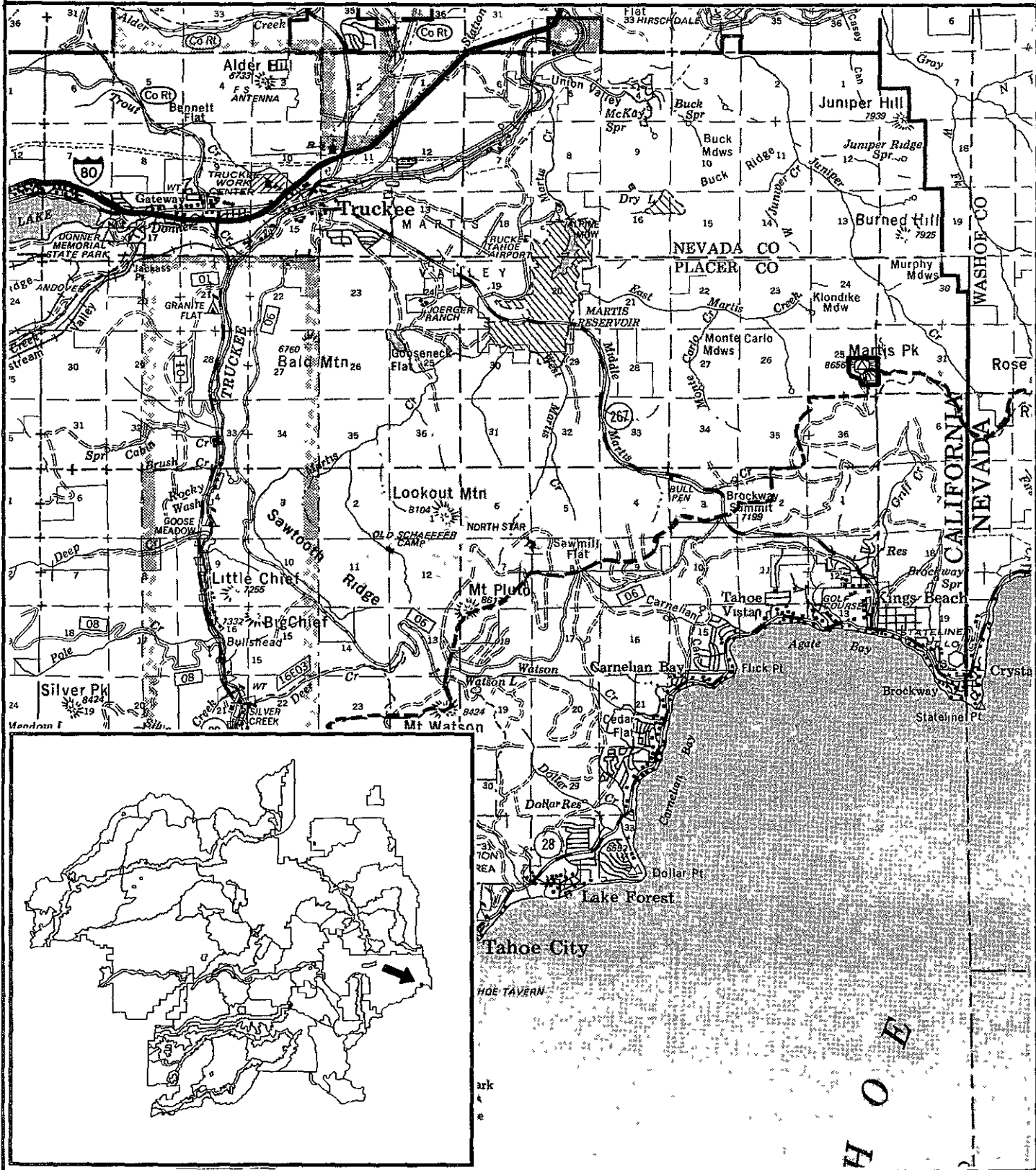
Monitor water quality to detect effects of mining in streamside management zones.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Section V

MANAGEMENT AREA 074

MARTIS

T16N, R17E



074 MARTIS

26 GROSS ACRES

26 NFS ACRES

I. DESCRIPTION

This management area (MA) is an isolated parcel located at the top of Martis Peak. The elevation varies from 8,500 feet to 8,742 feet at the top of Martis Peak. Average slope is 35 percent, with all aspects represented in the area.

The area has been used primarily as a Forest Service lookout for wildfire detection. This site is managed by the Tahoe National Forest, although it is located partially within the boundaries of the Lake Tahoe Basin Management Unit. The location of the site only provides a 180-degree view of the surrounding area. A Forest Service radio communications repeater has been located at the site but is presently not in operation. The University of Nevada at Reno is currently operating a seismograph under special-use permit and the National Weather Service has a resource monitoring radio repeater installed at the lookout.

The vegetation is primarily red fir type with scattered sage and snow brush. The area has a considerable outcropping of granite rock. There are no wetlands. There are 26 acres of unsuitable productive forest land.

There are no emphasis species. The area is situated directly in a major deer migration route.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Vandalism of the current administrative site is a recurring problem and a concern.

The fire lookout functions for fire detection and is a popular dispersed recreation destination and public vista site. Since it has only 180-degree visibility south to north, with no view to the west, it has limited value as a lookout.

There is an opportunity to restore the lookout via a volunteer 'adoption' project, perhaps in conjunction with developments on adjacent private properties. As such, it could be used as a back-up lookout and a dispersed recreation destination point.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to use this site for fire detection and as a public vista point. Pursue restoration through private contributions of labor and materials. Protect scenic quality. This area is unsuited for regulated timber management.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum- Roaded natural
- B Visual Quality Objective. Partial retention. This VQO allows management activities to be subordinate to the characteristic landscape. However, structures and roads should remain visually subordinate when viewed in background. To meet these requirements will, in some cases, require significant efforts at visual mitigation and project-level involvement of the Forest landscape architect. Where proposed installations in this latter category are in a visually prominent location, maximum practical mitigation will still be implemented even if the resultant visual quality will exceed the objective. The partial retention VQO will be applied as the base level or minimum acceptable visual quality.
- C Transportation Management Policy. Forestwide Standards and Guidelines apply.
- D Off-Highway Vehicle Restrictions- Closed
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 21

- At Nordic Cross-Country Skiing
- A6 Closed OHV

- G1 Minerals Management- Locatables
- G3 Minerals Management - Leasables

- J2 Land Adjustments - Limited

- L2 ~~Multiresource~~ Road Access Development- Road Construction/Reconstruction
- L3 ~~Trail Construction/Reconstruction~~ - Foot Traffic Only
- I7 ~~FA&O Construction~~Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- I13 ~~Transportation Management, Trails - Restricted Use~~

- P3 Fire Protection- Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Develop a plan for restoration and adoption to achieve that restoration. Allow commercial use in winter if project-level analysis warrants

Design vandalism-safe facilities

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

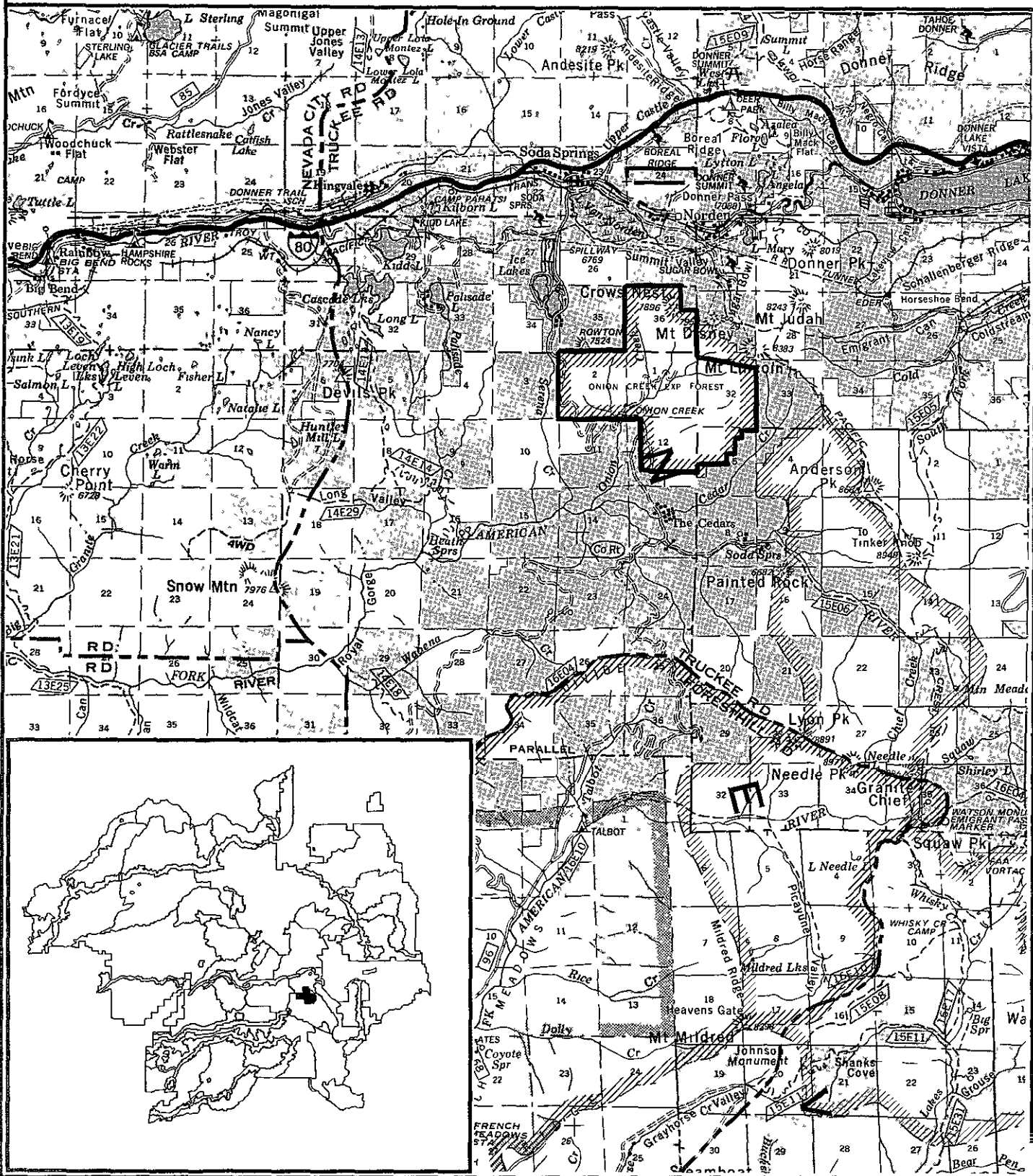
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 075

ONION

T16N, R15E



075 ONION

2,846 GROSS ACRES

2,846 NFS ACRES

I. DESCRIPTION

This management area (MA) was designated as the Onion Creek Experimental Forest by the Chief of the Forest Service on December 29, 1958, for watershed research purposes. It is managed under an agreement with the Pacific Southwest Forest and Range Experiment Station (PSW). This area is bounded on the north by the Sierra Nevada crest, including the peaks of Crows Nest, Mt. Disney, and Mt. Lincoln; on the east by Cedar Creek, on the south by the Cedars and the Onion Creek Campground, and on the west by the Placer County Soda Springs-Riverton Road. Elevations range from 6,000 to 8,300 feet. The aspect is variable, but generally southwest. A small salvage sale occurred along the Soda Springs-Riverton Road in the early 1980's, but generally the area has not been logged. There is a substantial accumulation of fuels that could pose fire suppression problems if ignited.

The Soda Springs-Riverton Road has been used in the past, as well as the present as a stock driveway and off-track Nordic ski trail. The road also was the main access to the Cedars, where there was a hotel used extensively by some of the early railroad founders. There is no public vehicular use allowed within this MA except for the Soda Springs-Riverton Road, which is a county road.

There are mixed conifer stands throughout most of the area, with true fir at the higher elevations. There are 135 acres of wetlands. There are 2,841 acres of unavailable productive forest land. Onion Creek is the major tributary that feeds into the North Fork of the American River. The 1964 flood did major damage to that portion of Onion Creek on which studies have been conducted. There is a snow survey course located near Onion Creek and a National Sign Study Plot near the center of the MA. The Onion Creek Concentrated Use Area (campground) is located near the Baker Ranch-Soda Springs Road.

Off-track Nordic skiing is popular in the Crows Nest area and along the Soda Springs-Riverton Road where terrain allows.

The selected emphasis species are deer, rainbow trout, and the meadow and riparian groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

A portion of the MA has not been withdrawn from mineral entry. Mineral exploration within the area would most likely conflict with the watershed objectives.

The area is unsuited for regulated timber management because of its classification as an Experimental Forest.

Even though the area is closed to public motorized access, there is some off-highway vehicular use occurring, causing some resource damage to wet areas and fragile dry openings. Also of concern is vandalism to research equipment and structures and to the cabin near Onion Creek. As a result, several proposals for off-track Nordic skiing outfitter/guide applications have been denied.

There is an opportunity to transfer portions of National Forest System lands located in Sections 5, 12, and 29 (MA 079) to this area. There is an opportunity to recommend for withdrawal from mineral entry portions of this MA not already withdrawn.

There is an opportunity to expand downhill skiing by the Sugar Bowl ski area on the NE slope of Crows Nest.

There are research opportunities for gaining further knowledge of timber harvest and its impacts on water quality, timing, and yield.

There is concern that severe fires could result from ignition of large volumes of accumulated natural and activity fuels.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to continue to promote the Pacific Southwest Forest and Range Experiment Station's tasks of studying the interrelationships between water, plants, soils, and climate, as related to water quality, yield, and flow timing. In addition, emphasis will include research on various land management activities, including timber harvest methods upon which guidelines are to be developed. Stress watershed protection (including reduction of accumulated fuels) and restoration in the riparian and fragile soil areas. Permit movement of range animals between allotments along the existing stock driveway. Prohibit motor vehicle entry except as needed for management purposes. The MA is unavailable for regulated timber management.

Should the **MA** be declassified as an Experimental Forest, the Forest **will** re-evaluate the Resource Management **Emphasis** through the NEPA process

Consider the expansion of Sugar Bowl ski area along the NE slope of Crows Nest in a project-level environmental analysis

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive nonmotorized within most of the area. Roaded natural appearing sk Soda Springs-Riverton Road. B. These will contribute to the objectives
- B Visual Quality Objective - Partial retention subject to research. If
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Off-Highway Vehicle Restrictions - Closed.
- E Forestwide Standards and Guidelines - All apply except 1, Wilderness Opportunity Level

V. AVAILABLE MANAGEMENT PRACTICES 2/

Most practices are applicable, depending on research objectives. Those that are specific to portions of the MA that are outside of the Experimental Forest or are specific to the adopted emphasis Statement are

- A1 Nordic Cross-country Skiing
- A6 Closed OHV
- A7 Mountain Bike Use
- A8 Developed Recreation and Interpretive Service Sites Management, Public Sector
- A10 Downhill Ski Management
- A12 Downhill Ski Planning

- G2 Minerals Management - Locatable Withdrawals
- G4 Minerals Management - Leasable Withdrawals

- Pt Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Withdraw those areas not yet withdrawn from mineral entry in order to avoid conflicts with research activities

Provide information to the public as to the purpose and management of this MA and minimize public access to areas where resource damage or vandalism to research facilities is occurring.

Jointly with PSW, develop a plan to reduce accumulated fuels to meet levels acceptable to other research objectives.

Consider any issues associated with ski area development in project-level environmental analyses

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

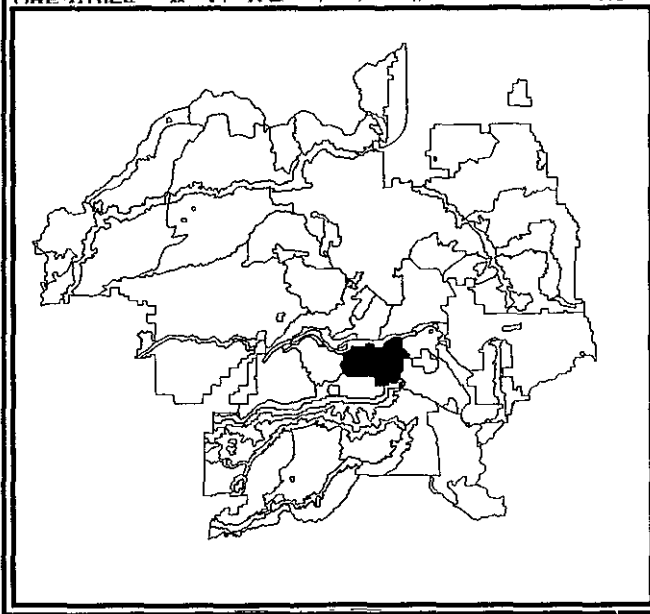
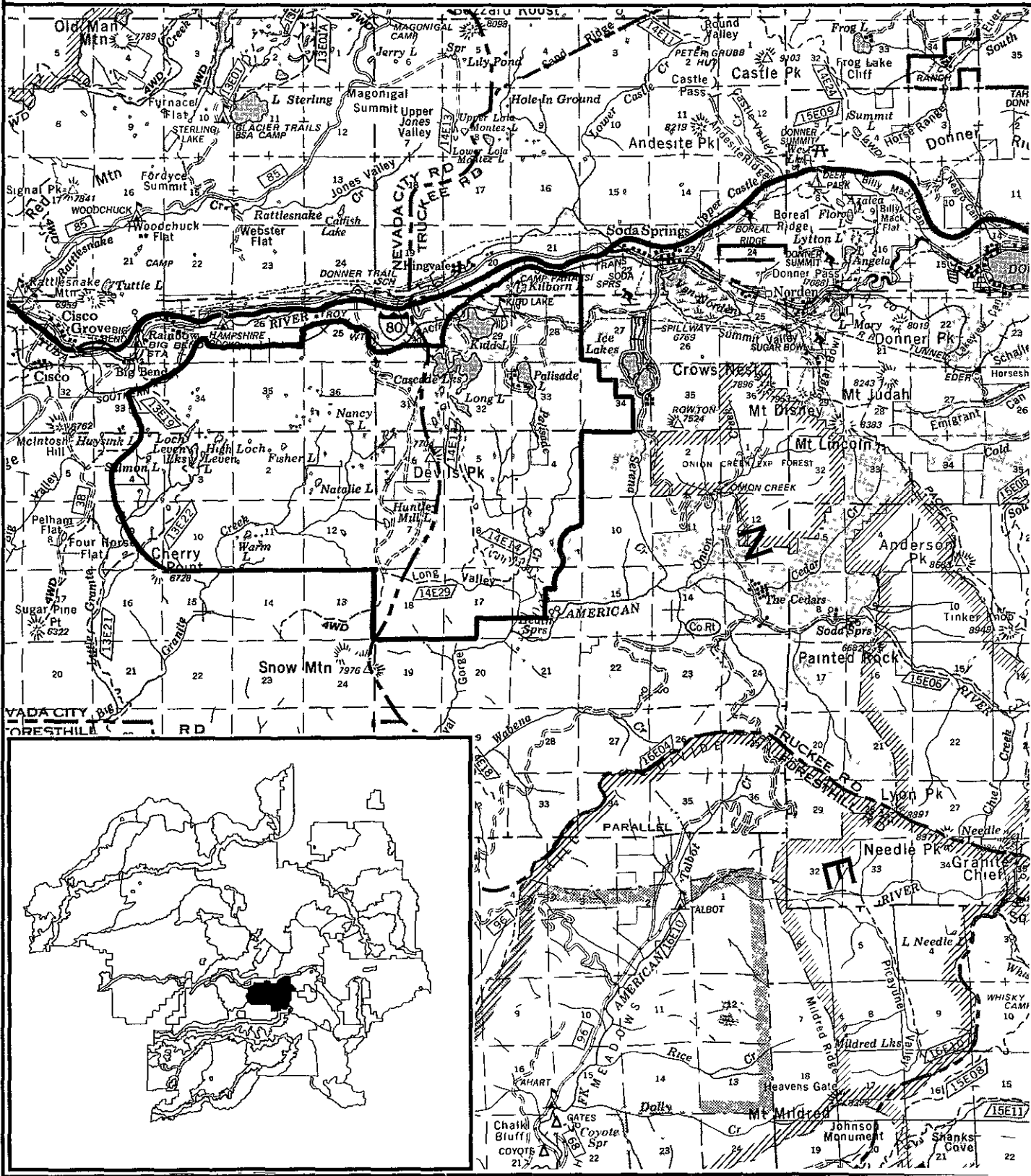
Coordinate management and research activities on an annual basis between the Tahoe National Forest and the Pacific Southwest Forest and Range Experiment Station

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 076

LOCH LEVEN

T16N, R14E



076 LOCH LEVEN

16,812 ACRES

7,324 NFS ACRES

I. DESCRIPTION

The area is located just west of the Sierra Crest, south of interstate 80 and north of the North Fork of the American River. Elevations vary from 5,700 to 7,700 feet with a west aspect. Land ownership is a checkerboard pattern with private ownership held by various entities, primarily a large timberland owner. Logging activity has taken place on both National Forest System lands and private ownerships. The area is very attractive to summer recreationists with its many small natural lakes, largely on private land. It is within the watersheds of the North Fork of the American River and South Yuba River. It contains a portion of the Devils Peak Range Allotment.

The area is popular for a variety of dispersed winter activities (particularly crosscountry skiing), summer dispersed recreation activities, and deer hunting. There is a trailhead planned for the Palisades Trail near Cascade Lake according to the North Fork American River Management Plan. Access by motorized vehicles is somewhat limited. The Loch Leven Trail is a heavily used hiking trail, providing access to Loch Leven Lakes.

Vegetation consists of true fir on the higher elevation north-facing slopes and mixed conifer in widely scattered stands on the remainder. The area is extremely rocky, with unconsolidated moraine material on the bottom and bedrock on top. There are 570 acres of wetlands, and 3,640 acres of unsuitable productive forest land.

A portion of the original Overland Emigrant Trail passes through the northern end of the area. Several lakes within the area were known 'layover' resting spots for the emigrants heading toward Johnson's Ranch and Sacramento.

Selected emphasis species are deer, blue grouse, goshawk, mountain quail, marten, and rainbow, brook, and brown trout. The area includes key fawning habitat and summer deer range.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is a concern to maintain visual quality, especially as Middleground from Interstate 80.

Road system management within the area is a concern, particularly road access. Obtaining rights-of-way and a railroad crossing for access could be difficult.

Some of the key recreation areas are in private ownership.

There is an opportunity to manage timber on a portion of the area.

There is a concern, however, that timber harvesting activities will detract from traditional dispersed recreation experiences.

There is a concern that management activities could adversely affect the Overland Emigrant Trail.

There is an opportunity to improve wildlife habitat.

There is an opportunity to further develop dispersed recreation, particularly cross-country skiing.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis for most of the area is dispersed recreation, both summer and winter. Manage timber stands on long rotation in Section 12 in T 16 N, R 13 E, and Sections 6 and 18 in T 16, N, R 14 E. The rest of the area is unsuited for regulated timber production. Emphasize wildlife management practices that improve habitat for indicator species and support dispersed recreation activities. Emphasize the acquisition of rights-of-way for public access to National Forest System lands and for resource management including off-track Nordic skiing.

Emphasize coordinated resource management to maintain scenic quality in visually sensitive areas.

Maintain the historical integrity of the Overland Emigrant Trail.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportuniry Spectrum - Roaded Natural
- B Visual Quality Objective - Partial Retention (in Sections 6, 12, and 18) Retention throughout the rest of the MA
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Off-Highway Vehicle Restrictions - Designated routes only. Open to over-the-snow travel
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- ~~C2~~ Stream Fisheries - Structural Improvement and Maintenance
- ~~C3~~ Lake Fisheries - Nonstructural Improvement and Maintenance
- c 4 Lake Fisheries - Structural Improvement and Maintenance
- c 5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- ~~C7~~ Late Seral Stage Vegetation Management
- ~~C8~~ Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- ~~D5~~ Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- ~~D8~~ Range Improvement - Structural (Permanent and Transitory)

- E 1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- ~~E7~~ Special Cutting
- E8 Uneven-Age Cutting Methods
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables

- J2 Land Adjustments. Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiple Resource Road Access Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike
- L6 Trail Construction/Reconstruction - Special Uses
- L7 FA&O Construction/Reconstruction

- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P2 Fire Protection - High Country, Non-Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Practice long rotation timber management only, in Sections 6, 12, and 18, to resolve the concern for visual quality and quality of dispersed recreation in the area. Consider further development to support dispersed recreation as demand increases.

Resolve the concern for transportation management by attempting to share costs of the existing road system with private landowners.

Consider key recreation sites in private ownership for acquisition or exchange as opportunities arise.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

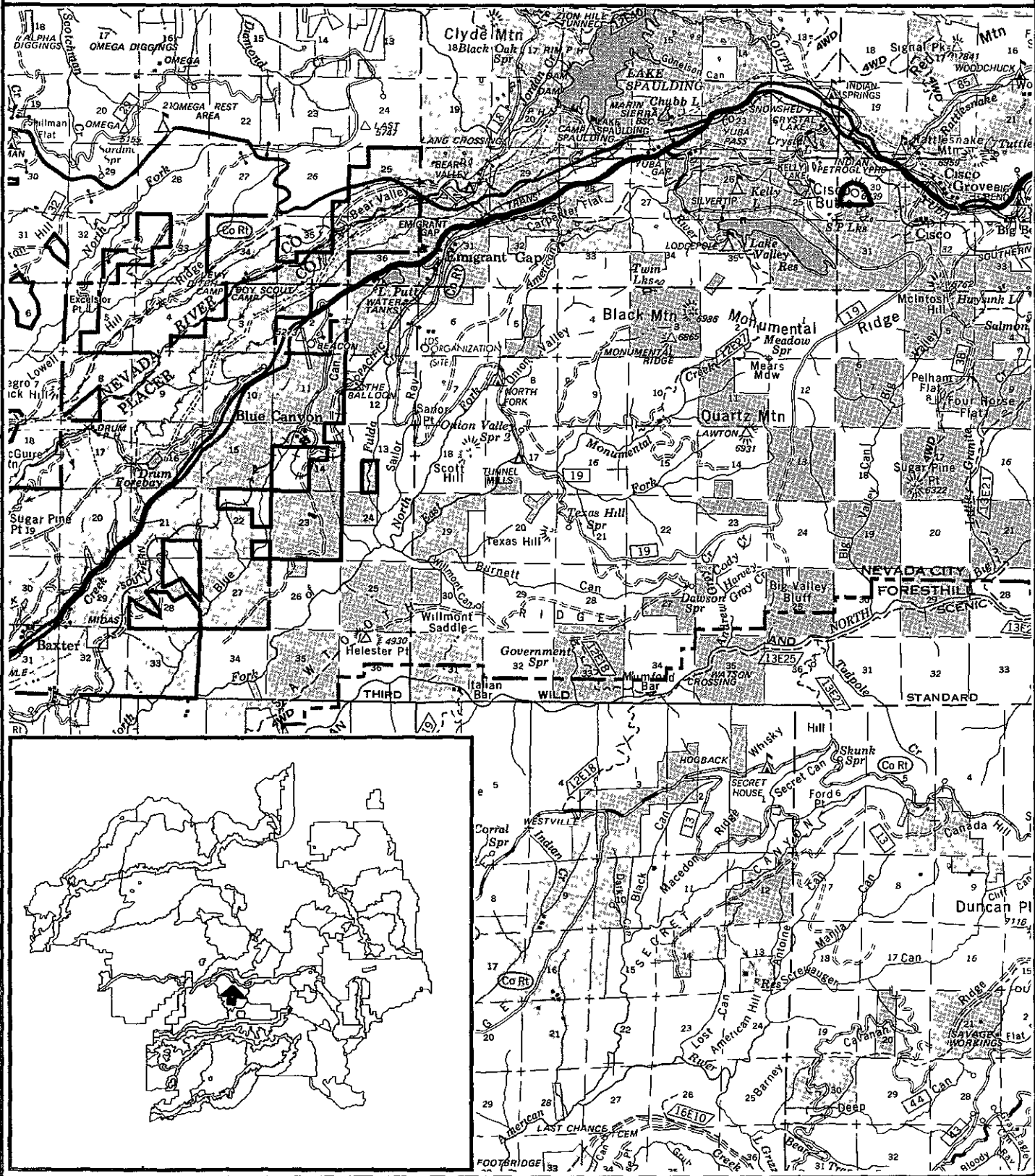
Monitor the visual quality in the I-80 middle ground because this area is included in the Master Plan of State Highways Eligible for Official Scenic Highway designation.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 077

CISCO BUTTE

T17N, R13E



077 CISCO BUTTE

53 GROSS ACRES

53 NFS ACRES

I. DESCRIPTION

This management area (MA) is located ten miles west of Soda Springs at Cisco Butte. Elevation at the top of the butte is 6,639 feet. A high point along the South Yuba River canyon, this point provides an ideal location for many electronic uses. A powerline provides electrical service to the site. There are additional electronic sites on adjacent private land. There is an approved electronic site plan for the area on National Forest System lands.

The area is sparsely vegetated. Most of the land surface is rock with only a few areas with enough soil to support vegetation. There are no selected emphasis species. Wetland acreage is insignificant. There are 23 acres of unsuitable productive forest land.

American Telephone and Telegraph and Pacific Telephone and Telegraph own and maintain a large microwave repeater station on the butte—part of a transcontinental link. Other uses include a cable TV antenna system, a radio transmitter, and a radio-operated cloud seeding generator. All of these uses are authorized by special-use permits. Vehicle access to the site is by road from Yuba Gap. Access during the winter and spring normally requires over-the-snow vehicles.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The MA is surrounded by MA 066, which emphasizes managing for visual quality.

There is an opportunity to concentrate compatible electronic uses at this and other approved electronic sites.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is use as an electronic site. Permits will require that facilities minimize visual impact. Consider compatibility of uses when evaluating applications for special-use permits. Prohibit incompatible electronic uses. Give preference to existing uses.

The MA is unsuited for regulated timber production.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

A Recreation Opportunity Spectrum- Rural

B Visual Quality Objective- Modification This VQO allows management activities to dominate the characteristic landscape; however, structures and roads should remain visually subordinate when viewed in background. To meet these requirements will in some cases require significant efforts at visual mitigation and project-level involvement of the Forest landscape architect. Some areas, however, might require very little mitigation to satisfy the modification objective. Where proposed installations in this latter category are in a visually prominent location, maximum practical mitigation will still be implemented even if the resultant visual quality will exceed the objective. In other words, the modification VQO will be applied as the base level or minimum acceptable visual quality.

C Transportation Management Policy - Forestwide Standards and Guidelines apply

D Off-Highway Vehicle Restrictions- Closed.

E Forestwide Standards and Guidelines- All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A6 ClosedOHV
- G1 Minerals Management- Locatables
- G3 Minerals Management- Leasables

- J2 Land Adjustments - Limited

- L2 Multiresource Road Access Development- Road Construction/Reconstruction
- L6 Trail Construction/Reconstruction - Special Uses
- L7 FA80 Construction/Reconstruction
- L9 Transportation Management, Roads - Regulated Use

- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The electronic site plan provides guidelines and direction for management and use of the area. Revise and update this plan for new development as needed. The Forest Service and the Federal Communications Commission will evaluate all new applications for compatibility. Deny incompatible frequencies.

Consider visual quality when preparing permits for new facilities. Although modification is the objective, try to exceed these standards whenever possible.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

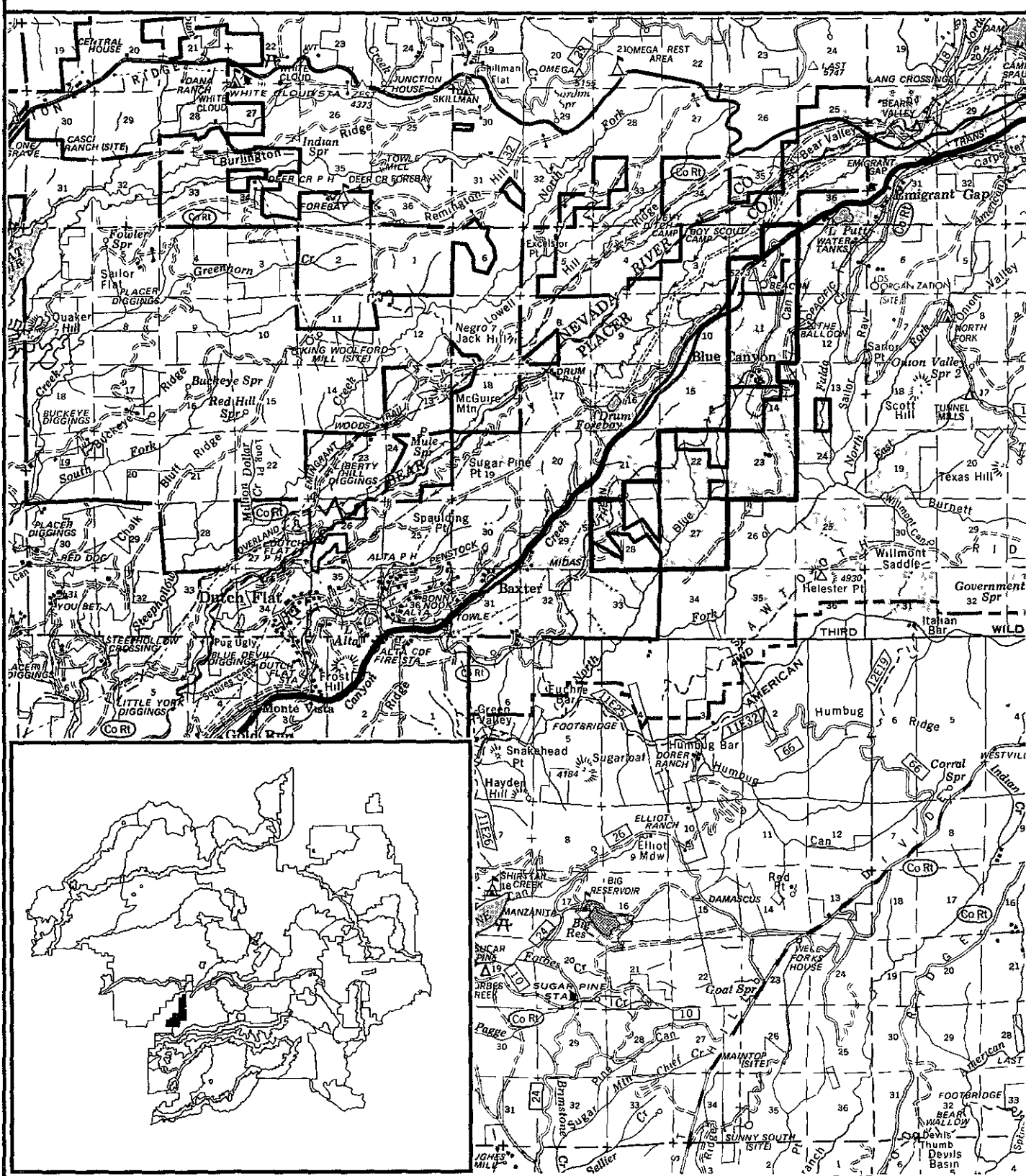
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- V Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 078

BLUE

T16N, R11E



078 BLUE

1,272 GROSS ACRES

1,272 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately between Baxter and Blue Canyon, east of and adjoining Interstate 80. The area consists of isolated parcels of National Forest System land. The Southern Pacific Railroad crosses the MA. Road access to several parcels is limited or nonexistent, however, the northernmost parcel is bisected by Interstate 80. The southernmost parcel, at Midas, is mineralized and has been the site of mining since the hydraulic mining era. Elevations range from 2,600 feet on Blue Canyon Creek to 5,300 feet along Interstate 80.

The vegetation consists of 476 acres of shrubs and hardwoods on steep south-facing slopes in Blue Canyon, 644 acres of commercial forest consisting of ponderosa pine and mated conifers, and 132 acres of plantations. There are 30 acres of wetlands. There are 796 acres of unsuitable productive forest land.

On the northernmost parcel, Placer County maintains an airport. Also present at this location are radio repeaters, cloud seeding equipment, powerlines, a weather station, and waterlines, all under special-use permits.

Very little work has been done to establish property lines, few rights-of-way are obtained, and establishment of surface rights has not been accomplished on claims predating the 1955 Multiple Use Mining Act (P.L. 367).

The selected emphasis species are deer, rainbow trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The area has been proposed for exchange in the past, with some interest from individuals desiring to acquire specific parcels in the area. The southern parcels provide good deer winter range, which, if exchanged, would go into private ownership. Mining claims would have to be cleared and land withdrawn from mineral entry if an exchange were to be completed.

The ability to manage these scattered parcels is a concern because of poor access, lack of rights-of-way, extensive surveying needs, and small parcel size. Much of the land is highly productive timberland.

The parcel containing the Blue Canyon airport borders Interstate 80 where visual quality is important.

Land exchange would require termination or accommodation of the existing special uses at the Blue Canyon airport site and clearing or otherwise negotiating with the mining claims on the Midas parcels.

Some types of new special uses could further encumber the land and might make the land less desirable for exchange.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize custodial management until exchanged. Only make investments in these parcels commensurate with the prospects of land exchange.

Manage special use permits, including mining activities.

Most of the area is unsuited for regulated timber production because of potential land exchange.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum • Adjacent to I-80, rural, Other areas roaded natural.
- B Visual Quality Objective • Partial retention in northernmost parcel and in foreground as viewed from I-80 and the railroad Modification for remainder of area
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Open
- E Forestwide Standards and Guidelines • All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV

- G1 Minerals Management- Locatables
- G2 Minerals Management- Locatable Withdrawals
- G3 Minerals Management- Leasables
- G4 Minerals Management- Leasable Withdrawals

- J3 Land Adjustments • Potential Exchange

- L1 Timber Access Road Development- Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction- Foot, Equestrian and Trailbike
- L6 Trail Construction/Reconstruction -Special Uses
- L6 Transportation Management, Roads- Open
- L9 Transportation Management, Roads. Regulated Use
- L10 Transportation Management, Roads- Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Limit investments to those where a return on the investment is likely within the plan period.

Authorize no new special uses if they will make it more difficult to exchange the property. Issue new permits if they are compatible with and within the developed area at the Blue Canyon airport

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

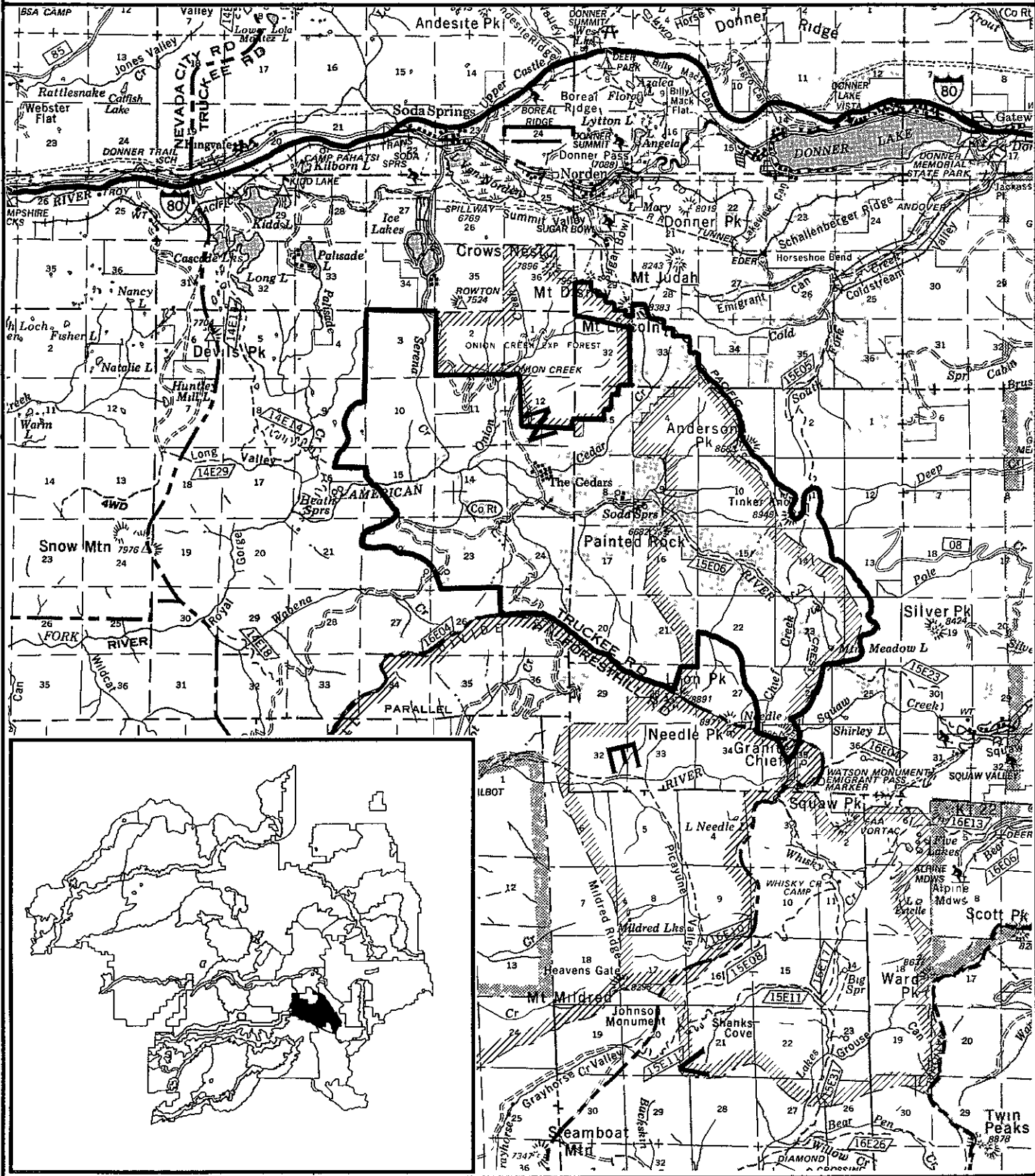
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to Schedule D, Conditions of Mitigation and Practice in Chapter V

MANAGEMENT AREA 079

CEDARS

T16N, R15E



079 CEDARS

14,958 GROSS ACRES

6,675 NFS ACRES

I. DESCRIPTION

This management area (MA) is within the upper watershed of the North Fork of the American River, which is just south of the Onion and Donner Pass management areas. It is bordered on the north by the Onion Creek Experimental Forest and the Sierra Nevada crest on the east. The Foresthill Divide ridge and the Granite Chief Wilderness (MA 080) are the southern boundary, with the Wabena Creek watershed the boundary on the west. The elevation varies from 4,900 feet in the North Fork American River canyon to 9,000 feet near Granite Chief Peak.

Most of the lands within this management area are privately owned. The major landowners are the North Fork Association and the Chickering Estate. The Chickering Estate and the University of California have a research-use agreement for most of the Chickering Estate lands called the Chickering American River Reserve. It is located in Sections 15 and 23 and portions of Sections 9, 16, and 25, T 16N, R 14E, MDB&M.

Portions of both the National Forest System and private lands in the western portion have been logged, but most of the eastern portion is unroaded.

The area has limited vehicular access. The primary road is Placer County's Baker Ranch-Soda Springs Road, which bisects the area. Approximately 7.5 miles of the Pacific Crest Trail crosses the eastern flank of the MA. The nonroaded portion of the area provides a limited and unique recreation atmosphere. These values are magnified as a response to the proximity to the classified wilderness area.

Vegetation consists of true fir stands at the higher elevations and mixed conifer in the lower areas. There are 402 acres of wetlands. There are 6,575 acres of unavailable forest land. Portions of the Sierra Crest Sheep Grazing Allotment are within this area.

There are stands of mountain hemlock and other associated vegetation, which could possibly meet the criteria for a Research Natural Area (RNA), located just north of Lyon and Needle Peaks.

The selected wildlife emphasis species are deer, rainbow trout, and the meadow and riparian groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The North Fork Association and Chickering Estate are concerned about unauthorized public use, especially from activities originating on National Forest System lands. This unauthorized use currently occurs within the boundary of the North Fork of the American Wild River, along the crest in Section 33, and from the Soda Springs-Baker Ranch County Road. After deleting the private trail along the river from Forest Service maps, there has been improvement in the unauthorized use situation.

The Chickering Estate and the University of California are interested in using the National Forest System lands. Their objective is for preservation and management of a cross-section of the State's natural diversity to meet the University of California's teaching and research needs in disciplines that require field work. There is a potential RNA candidate located near Lyon and Needle Peaks.

There is an opportunity for helicopter skiing in the eastern portion of the MA.

There is an opportunity to provide a trans-Sierra trail to be used for general recreation and recreation events.

There is an opportunity to improve winter public access along the crest of the Sierra Nevada in Section 33. This would allow continued off-track Nordic skiing between old Highway 40 and Squaw Valley. The NFS lands east of the private lands in Section 33 (and east of the crest), are prone to avalanche activity.

There is an opportunity to transfer the National Forest System lands located in the southwest portion of Section 29, a small portion of Section 5, and portions of the south half of Section 12 to the Onion Creek Experimental Forest (MA 075).

There is a concern that inadequate access to the Painted Rock Trail exists and that access to that trail over traditional routes may be in conflict with the private landowners through which the historic route passes.

11. RESOURCE MANAGEMENT EMPHASIS

Emphasize semi-primitive nonmotorized dispersed recreation opportunities in the eastern portion of the MA in harmony with forestry research and the protection of water quality. Restrict the public lands available to commercial recreation uses to Sedtons 10 and 11 and to areas adjacent to the PCT. With the exception of approximately 100 acres in Sedtons 10 and 11 adjacent to the Soda Springs Baker Ranch Road, the area is unsuitable for regulated timber production.

Retain ownership of the sensitive semi-primitive nonmotorized areas.

Manage the lands in Sections 5, 12 and 29 to be compatible with the Onion Creek Experimental Forest until a decision is made about their inclusion in the Experimental Forest.

Complete a site-specific analysis of a new trans-Sierra trail to serve general recreation and recreation event needs. Determine the suitability of that trail to commercial recreation uses as part of the analysis.

Negotiate with private landowners to relocate the western segment of the Painted Rock Trail.

Lyon Peak/Needle Lake area is under further study to be designated as the Mt. Hemlock RNA candidate. It will be managed as if it were a RNA until a decision is made.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural and semi-primitive motorized in the western portion and semi-primitive nonmotorized in the eastern portion.
- B. Visual Quality Objective - Retention for foreground of use areas of the Wild River in MA 082 and for the eastern semi-primitive nonmotorized portion of this MA, preservation for the Lyon Peak/Needle Lake potential Research Natural Area. Partial retention for the remainder of the MA.
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D. Off-Highway Vehicle Restrictions - Designated routes only.
- E Forestwide Standards and Guidelines - All apply.

V. MANAGEMENT AREA PRESCRIPTION 2/

- A1 Nordic Cross-Country Skiing
- A3 Commercial Nordic Cross-Country Skiing
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- A15 Special Interest Area Investigations and Management
- A16 Research Natural Areas

- C1 Deer Habitat Management
- C2 Stream Fisheries - Nonstructural Improvement and Maintenance
- C3 Stream Fisheries - structural Improvement and Maintenance
- C6 Early Succession Vegetation Management
- C7 Mid-succession Vegetation Management
- C8 Old Growth Vegetation Management
- C10 Riparian and Meadow Vegetation Management
- C12 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E7 Special Cutting

- F3 Flow Timing improvement

- G1 Minerals Management- ~~Locatables~~
- G2 Minerals Management- ~~Locatable Withdrawals~~
- G3 Minerals Management- ~~Leasables~~
- G4 Minerals Management- ~~Leasable Withdrawals~~

- J2 Land Adjustments - ~~Limited~~

- L1 ~~Timber Access Road Development- Road Construction/Reconstruction~~
- L2 ~~Multi-resource Road Access Development- Road Construction/Reconstruction~~
- L3 ~~Trail Construction/Reconstruction - Foot Traffic Only~~
- L4 ~~Trail Construction/Reconstruction - Foot & Equestrian Traffic Only~~
- L8 ~~Transportation Management, Roads - Open~~
- L9 ~~Transportation Management, Roads - Regulated Use~~
- L10 ~~Transportation Management, Roads - Closed~~
- L11 ~~Transportation Management, Roads - Obliterated~~
- L12 ~~Transportation Management Trails - Open~~
- L13 ~~Transportation Management, Trails - Restricted Use~~
- L14 ~~Pacific Crest National Scenic Trail Management~~

- P5 Fire Protection-Visual, High Use, Reservoirs, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Prohibit regulated harvest in the streamside management area.

Negotiate a right-of-way for off-track Nordic skiing along the crest in Section 33

Use National Forest System local roads ~~only~~ for dispersed recreation or administrative purposes

Consider location and planned use of a trans-Sierra general recreation access and recreation event trail in a project-level environmental analysis. Relocate the western portion of the Painted Rock Trail to minimize conflicts between trail users and private landowners.

Permit commercial dispersed recreation, such as Nordic skiing, recreation events, and summer outfitter guiding, following environmental analyses. Limit the public lands considered available to such commercial uses to the areas specified in the Resource Management Emphasis presentation for this MA. Allow other than Forest Service research under permit following environmental analyses.

Manage the lands in Sections 5, 12, and 29 to be compatible with the Onion Creek Experimental Forest until a decision is made on their inclusion into the Experimental Forest

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

Evaluate portions of sections 5, 12, and 29 for inclusion into the Onion Creek Experimental Forest (see MA 075).

Evaluate the mountain hemlock stands north of Lyon and Needle Peaks area for RNA potential

Monitor dispersed recreation and wildland management research

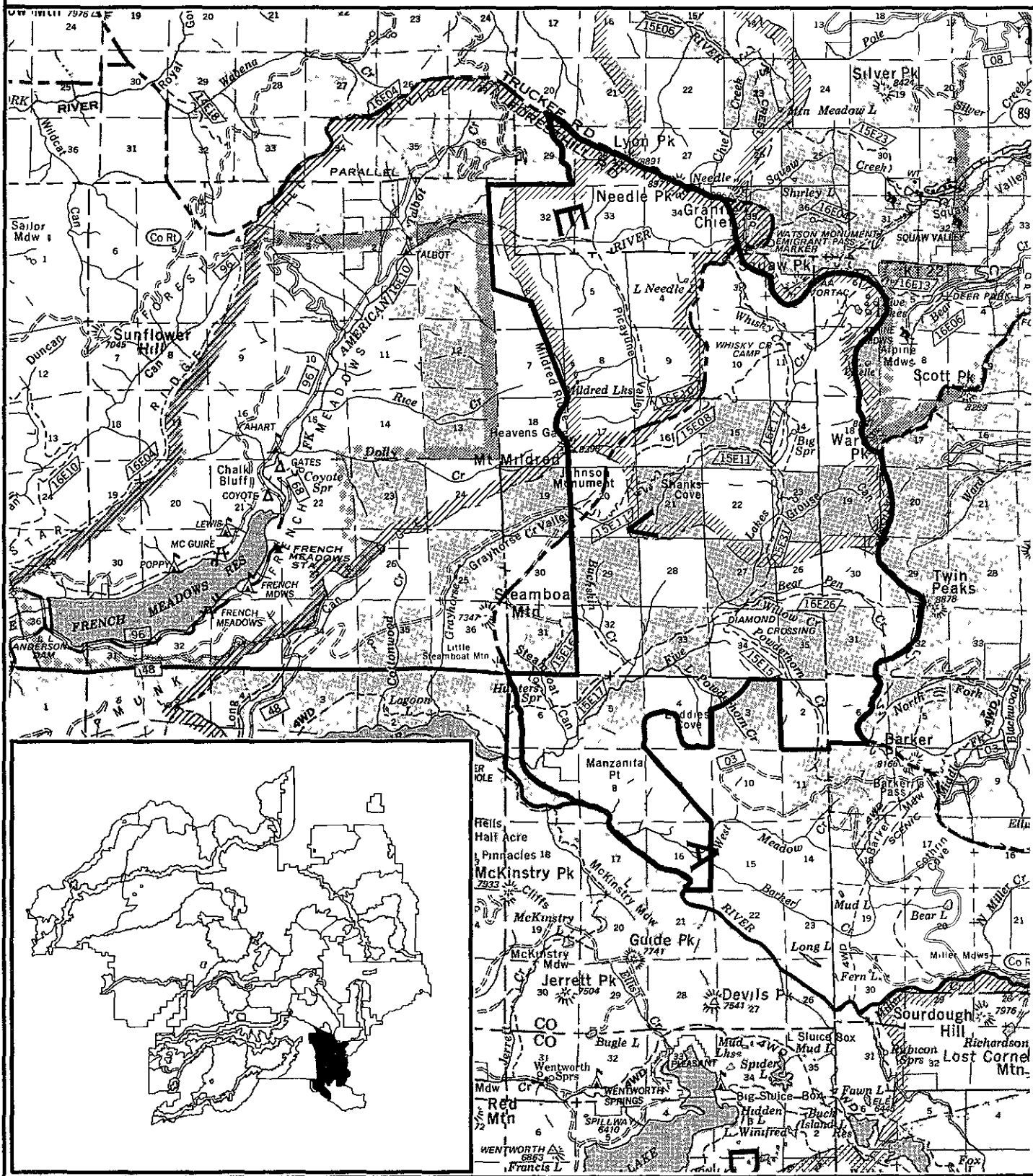
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 080

GRANITE CHIEF

T15N, R15E



080 GRANITE CHIEF

24,600 GROSS ACRES

18,705 NFS ACRES

I. DESCRIPTION

This management area (MA) was established as wilderness under the California Wilderness Act of 1984. It extends along the western slope of the Sierra Nevada from Granite Chief Peak to Barker Peak. A small acreage lying east of Twin Peaks is within the Lake Tahoe Basin Management Unit. Elevations range from 5,000 to 9,000 feet. The area includes the heavily used Five Lakes Basin, which is conveniently accessible for day use. There is one other wilderness lake fishery. Most recreation use occurs adjacent to drainages such as Five Lakes Creek, Picayune Creek, Middle Fork American River, and along the Pacific Crest National Scenic Trail (PCT).

The terrain varies from extremely rugged at the upper elevations and along canyon walls to fairly gentle along the valley bottoms. The vegetative cover is sparse on the steep, rocky slopes. Mixed conifer old growth timber is predominant in the valleys. There are 1,507 acres of wetlands. There are 18,705 acres of unsuitable productive timber land.

The area is served by an extensive trail system used by hikers and equestrians for general and commercial recreation activities. Most use originates from the east or Lake Tahoe side because of the ease of access and because of the population and recreation visitor base. User pressure from the west is comparatively light. There is north-to-south through traffic on the PCT but almost no general through traffic from east-to-west. On April 12, 1988 the Chief announced his decision to grant exception to Forest Service policy that prohibits competitive events in wilderness areas, he did this to permit five existing events and event-related outfilter guide activities to continue that were being conducted when Granite Chief was designated as wilderness. These events and activities each affect 4 to 5 miles of the Wilderness on a single day, several-hour basis, and a couple generate some pre-event training, orientation, or practice use within the Wilderness. These events and activities affect that portion of the Wilderness that lies on the trail network between Squaw Peak and Hodgson's Cabin.

Two outfitter guides pack visitors into the area, neither has been authorized priority use. The Wilderness is currently part of the Sierra Crest and Chipmunk Grazing Allotments, respectively sheep and cattle allotments. Historic and prehistoric sites are common in the MA. There is no known mineral potential in the area.

The Wilderness contains important summer range and key deer fawning habitat. The French Meadows Game Refuge includes a portion of the MA.

The selected emphasis species are deer, spotted owl, pileated woodpecker, goshawk, rainbow and brown trout, and the riparian and meadow groups.

Spotted owl habitat area X-1 lies within this MA.

Much private land has been exchanged for in the past several years, some private land still remains. Efforts continue to be made to acquire remaining included private land.

Various ski area improvements and electronic site facilities located on Squaw and Ward Peaks can be seen from within the Wilderness area.

Squaw Valley Ski Corporation has a 'ski slope' special-use permit for National Forest System lands adjacent to their lands outside the Wilderness boundary.

In 1982, the Regional Forester granted a road access easement for private land timber harvesting. That road system has not been constructed.

Structures exist at three sites in the MA. The Bradley Hut under a special-use permit to the Sierra Club at Five Lakes Basin, two historic cabins located at Whiskey Creek Camp, and remnants of a Forest Service administrative building at Diamond Crossing.

Demolition of the Diamond Crossing building was initiated in 1987 and will likely be completed by 1989. The Forest Service is obligated to allow the historic Whiskey Creek Camp cabins to fade into the landscape under the terms of a deed restriction.

A quarter-mile segment of road has been constructed on National Forest System land in error, and several acres that were logged some years ago are within the Wilderness. In addition, some adjacent logged-over private land is included.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The Bradley Hut and Whisky Creek Camp historic structures are incompatible with wilderness character and are in noncompliance with Wilderness management

Evidence of abandoned roads, remnants of the Diamond Crossing facilities, and logged-over areas on National Forest System lands represent 'works of man' and are therefore in noncompliance with Wilderness management

Intense recreation use, particularly in the Fives Lakes Basin and near Whisky Creek Camp, is causing both resource problems (in the form of soil and vegetation disturbance and perhaps water quality impacts) and social experience problems. These problems are magnified by the occasional presence of large parties, and also by outfitter/guide requests to provide service to the same areas even though denials have been based on environmental analyses

Motor vehicle use within the Wilderness has been authorized to expedite search and rescue operations, which frequently originate from downhill ski resorts

Very little habitat improvement can be performed in the fawning area because of the Wilderness designation. Habitat improvement should be a consideration when a managed fire program is developed.

The competitive events, particularly the equestrian events and activities, cause resource damage because of several factors including soil characteristics, trail alignment deficiencies, wet areas, inadequate maintenance, and high intensity use

The Western States Trail (WST) has received extensive public support for classification within the National Trails System. The WST will be designated a National Recreation Trail when rights-of-way have been acquired

The Forest Service must provide appropriate access to private inholdings. The possibility exists that the major property owner may wish to execute that right and perform logging activities on their holdings.

Occasionally, grazing of domestic livestock conflicts with the recreating visitor's expectations and may interfere with natural succession

The Chipmunk Grazing Allotment management plan, as conditions allow, permits cattle to drift into Upper Picayne Valley after September 1 for gathering purposes. Upper Picayne Valley is part of the Sierra Crest Sheep Grazing Allotment. The Chipmunk management plan provides that dual use will be coordinated on an annual basis with the operations of the Sierra Crest permittee. An allotment boundary adjustment or management plan change to permit cattle use in the upper valley on a permanent basis was deemed inappropriate in 1983 because of the pending Wilderness legislation. There is a need to reconsider present livestock management within this portion of the Wilderness

III. RESOURCE MANAGEMENT EMPHASIS

Manage this area as wilderness under the 1964 Wilderness Act regulations to ensure an enduring resource of wilderness for the enjoyment of present and future generations

Wild and Scenic river values will be protected for the Upper Rubicon River from Hell Hole Reservoir and up until such time as eligibility and, if required, suitability studies are completed and new management emphasis developed.

The use of fire within predetermined prescriptions for both planned and unplanned ignitions may be used where necessary to meet wilderness resource objectives following appropriate analyses.

Acquire private inholdings as the opportunities arise

Continue management of domestic livestock uses that were established prior to classification under the general regulations governing grazing of livestock on National Forest System land (36 CFR 293.7). Provide for only conditional use of cattle in upper Picayne Valley on the Sierra Crest Grazing Allotment

Management Plans for the Western States and Tevis Cup National Recreation Trails will be developed during Plan implementation. In the interim, management activities are designed in a manner that will not preclude designation. Although the WST does not qualify for National Historic or Scenic status, the trail does have historic and scenic values to some users, and strong consideration should be given to maintaining the integrity of these qualities in management decisions

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

A. Recreation Opportunity Spectrum- Primitive, guided by the following general relationships of wilderness opportunities:

opportunity level #1, (most primitive)	90 0%
opportunity level #2,	44%
opportunity level #3,	4 6%
opportunity level #4, (least primitive that is compatible with Wilderness classification)	1 0%

B Visual Quality Objective - Preservation

C Transportation Management Policy - Trail access to be identified on Wilderness Implementation Plan

D Mf-Highway Vehicle Restrictions- Closed

E Forestwide Standards and Guidelines - All apply except 35, 36, 37, 38, 39, 40, 41, and 42

V. AVAILABLE MANAGEMENT PRACTICES 2/

A1 Nordic Cross-country Skiing

A6 Closed OHV

AS Recreation Management (Private & Other Public Sector)

B1 Wilderness Area Management

C1 Stream Fisheries- Nonstructural Improvement and Maintenance

c7 Late Seral Stage Vegetation Management

D2 Range Management- Permanent Range Type (Extensive Management)

D7 Range Improvement- Nonstructural (Permanent and Transitory)

D8 Range Improvement- Structural (Permanent and Transitory)

G1 Minerals Management - Locatables

G2 Minerals Management - Locatable Withdrawals

G3 Minerals Management- Leasables

G4 Minerals Management- Leasable Withdrawals

J1 Land Adjustments - Retain and Acquire

L3 Trail Construction/Reconstruction - Foot Traffic Only

L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only

L12 Transportation Management, Trails - Open

L13 Transportation Management, Trails - Restricted Use

L14 Pacific Crest National Scenic Trail Management

P6 Fire Protection- Wilderness - Wild River

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Manage this area as Wilderness under appropriate laws and regulations. Develop a Wilderness Implementation Plan (WIP) within 2 years following approval of the Forest Plan. Following completion of the WIP, manage this MA in accordance with the WIP's direction. The Forest Plan may need to be amended or revised accordingly.

Retain National Forest System lands in this area. Acquire private inholdings to comply with the California Wilderness Act of 1984. The NFS lands exchanged for these inholdings will account for about a 2.6 MMBF/year reduction in the Forestwide timber Allowable Sale Quantity.

Remove the Bradley Hut within five years as it is not needed for management, protection, or use of the Wilderness. Remove the remnants of the Diamond Crossing facilities. Allow the Whisky Creek Camp historic facilities to be reclaimed by nature. Perform stabilization as necessary to assure public safety as this process matures but not to prolong that process.

Allow, as a minimum, the logged and roaded area on National Forest System land to return to its natural character through natural processes. The Wilderness Implementation Plan may specify restorative action to aid the process.

In addition to an annual special-use permit for each year's use, develop appropriate agreements with the five groups authorized to use the Wilderness for equestrian or running events or activities. The agreements should include a course of action that minimizes environmental impacts to the extent practicable, both in the Wilderness and non-wilderness segments, with highest priority given to the Wilderness segment.

Recognize that the Wilderness Act, Section 4 (d) (4) (2), authorizes grazing of livestock to continue. Provide for only conditional use of cattle in upper Picayune Valley on the Sierra Crest Grazing Allotment. Perpetuate the mechanism which provides the lamude for annual authorization in accordance with the allotment plan for the current permittee. As has been the practice in the past, when annual authorization is given, incorporate restrictions including authorizing cattle use only after sheep have left the valley and a determination is made that forage is available, trend of the forage, consideration of other resource needs of the area, limiting cattle use to natural drift, no salting for cattle, and generally limiting numbers to a maximum of 40 head regardless of forage available.

Limit recreation party size to 12 individuals.

Allow only those commercially provided outfitter guide services that are compatible with Wilderness management objectives and at levels not to exceed those established below.

Type of Service/Location	Maximum Level
Equestrian service into the Five Lakes Creek drainage with destinations down stream from the PCT (including trips to the Manzanita Point area).	92 service days 200 horse trips
Guided Backpack Service (excluding the Five Lakes Basin).	50 Service days
Guided Off-Track Cross Country Ski Service	50 service days

Improve fawning habitat as a secondary benefit of prescribed fire within the Wilderness.

Develop a spotted owl management plan for SOHA X-1

Develop a management plan for the Western States and Tevis Cup Trails

Seek to minimize the visual impacts of electronic site and ski resort facilities located outside of the MA as seen from points within the Wilderness. However, recognize that those improvements are outside of the Wilderness and that the Forest Service does not recognize wilderness buffer strips. Continue to work closely with the ski resorts to minimize the need for search and rescue operations within the Wilderness.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor dispersed recreation use for conformity with the Wilderness Implementation Plan

Monitor deer fawning use

Monitor water quality, vegetation trend and condition, and soil compaction and recreation use, specifically in the Five Lakes Basin and Whisky Creek Camp areas

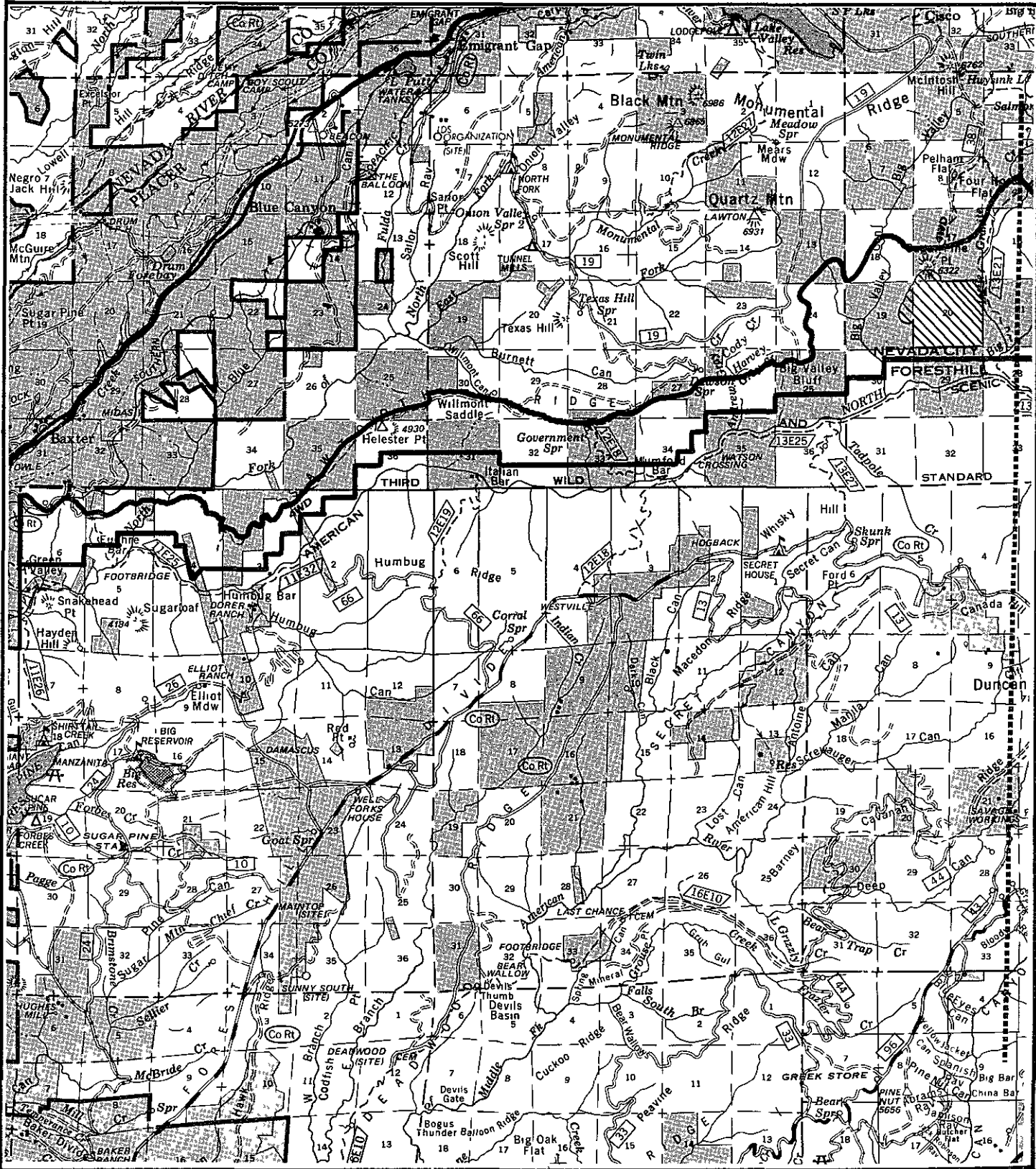
Monitor recreation events and activities

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 081

SNOW

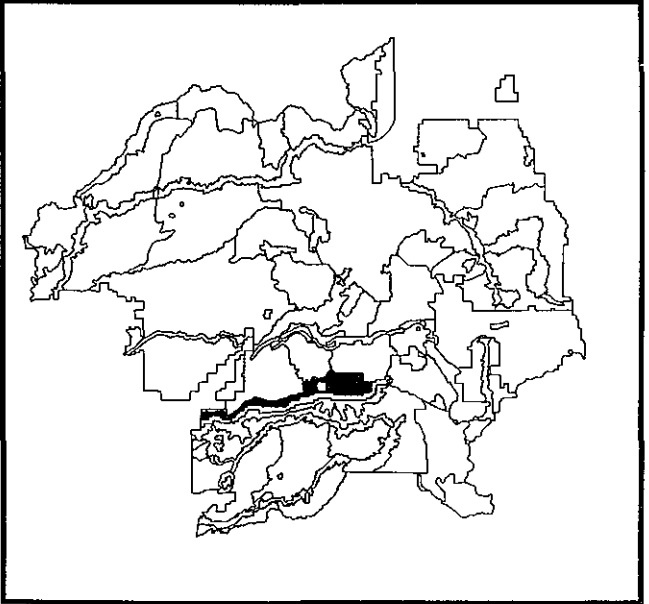
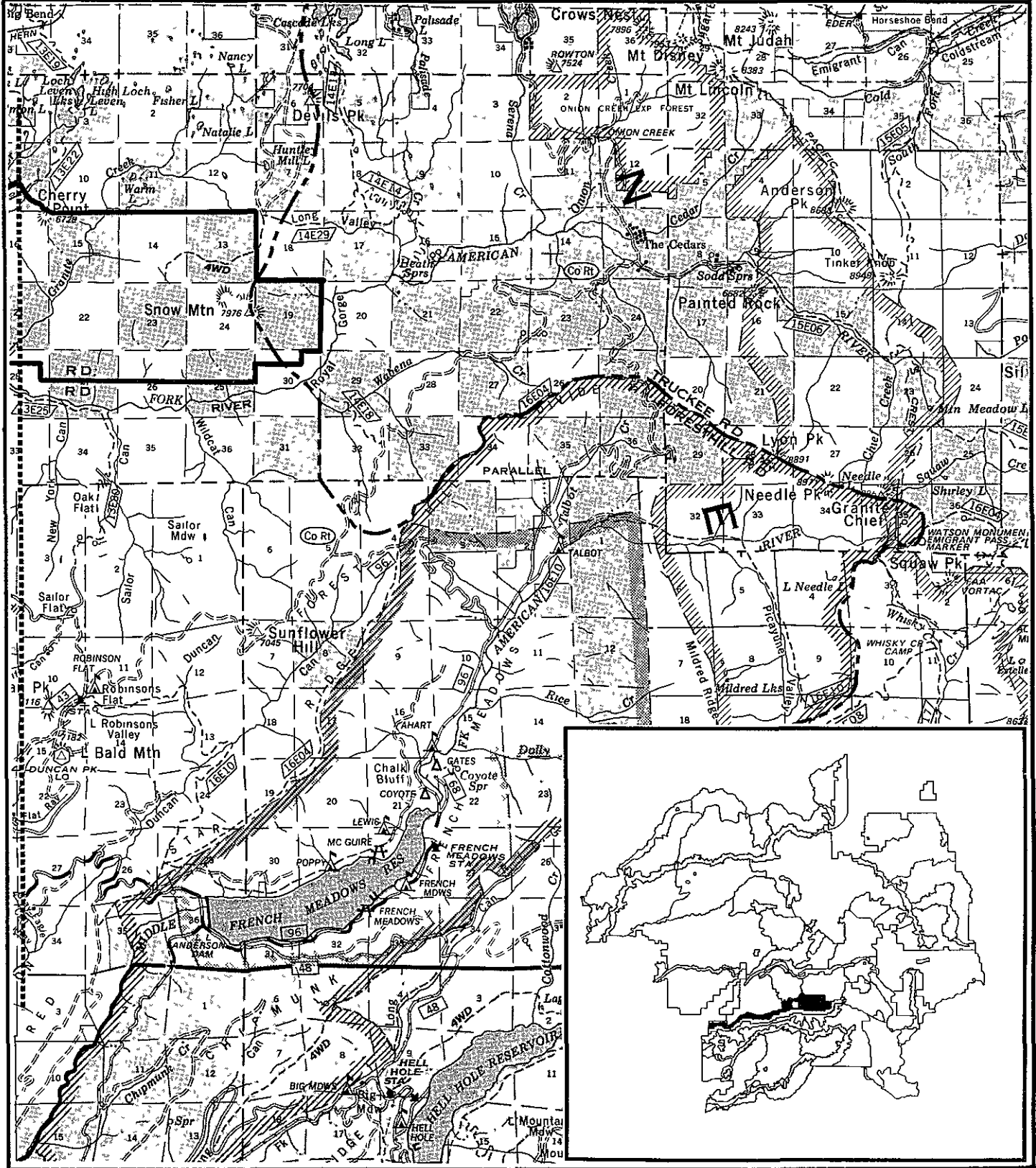
T16N, R13E



MANAGEMENT AREA 081

SNOW

T16N, R13E



081 SNOW

12,632 GROSS ACRES

7,000 NFS ACRES

I. DESCRIPTION

This area extends from Snow Mountain on the east to the Forest boundary on the west. The area includes the northern side of the North Fork American River Canyon. Elevations range from 7,976 feet on Snow Mountain to 2,800 feet near the North Fork American River. The Wild River boundary is the south boundary of this area.

Vegetative cover varies from dense brush to rocky areas with sparse vegetation, to dense stands of overmature fir and some pine. There are 102 acres of wetlands. There are 3,989 acres of sensitive soils. There are 2,287 acres of unsuitable timber land.

Most of this area is undeveloped. Four-wheel-drive routes provide access to Snow Mountain, Sugar Pine Point, and the Blackhawk Mine property. Trails provide foot access in limited parts of the area and to the river. The three most important trails, the Euchre Bar, Mumford Bar, and Big Granite trails, provide access into the North Fork American River canyon.

Recreation use in the area is light, most of it along the trails and several of the larger streams. The trails have been closed to motorized vehicles since 1979.

The selected emphasis species are blue grouse, bear, goshawk, deer, gray squirrel, prairie falcon, pine marten, and rainbow trout. The area contains both winter and summer deer range.

This MA contains a portion of the Devils Peak Range Allotment.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Management of visual quality along the trails is a concern.

There is a concern to restrict disturbance on the key winter range. There are opportunities for brushfield treatment through prescribed burning to create a variation in ages of brush stands which would improve habitat, especially in the key winter range.

Some publics desire this area to be managed as Wilderness.

Intensive management on sensitive soils could cause accelerated soil erosion.

There may be an opportunity to manage the timber in this MA; economic considerations could preclude this.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphases are dispersed recreation, visual quality, and wildlife.

Timber is unsurded, manage on an unregulated basis.

Emphasize managing brushfields to increase age diversity of the brush to improve wildlife habitat.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - semi-primitive nonmotorized, semi-primitive motorized, and roaded natural
- B Visual Quality Objective - Retention for Foreground seen from use areas within the Wild River (MA82) and other key viewing areas. Partial Retention for remainder of area.
- C Transportation Management Policy - Close all roads to the public except those that provide access to trailheads.
- D Off-Highway Vehicle Restrictions - Closed except for designated routes. Open to over-the-snow travel in semi-primitive motorized and roaded natural areas.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES^{2/}

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A6 Closed OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A17 Visual Resource Improvement

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid Succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Street Traffic Only
- L9 Trail Construction/Reconstruction, Roads. Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads. Regulated Use
- L13 Transportation Management, Trails - Regulated Use

- Pt Fuel Production - Continued Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Practice unregulated timber management. Do not develop roads to improve access for recreation. Restrict vehicle travel to designated routes. When feasible, treat brushfields to improve wildlife habitat. Manage key winter range to develop a 60/40 forage-cover ratio.

Maintain a primitive recreation experience by limiting developments to trails and primitive four-wheel-drive routes. Manage trails for nonmotorized recreation.

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

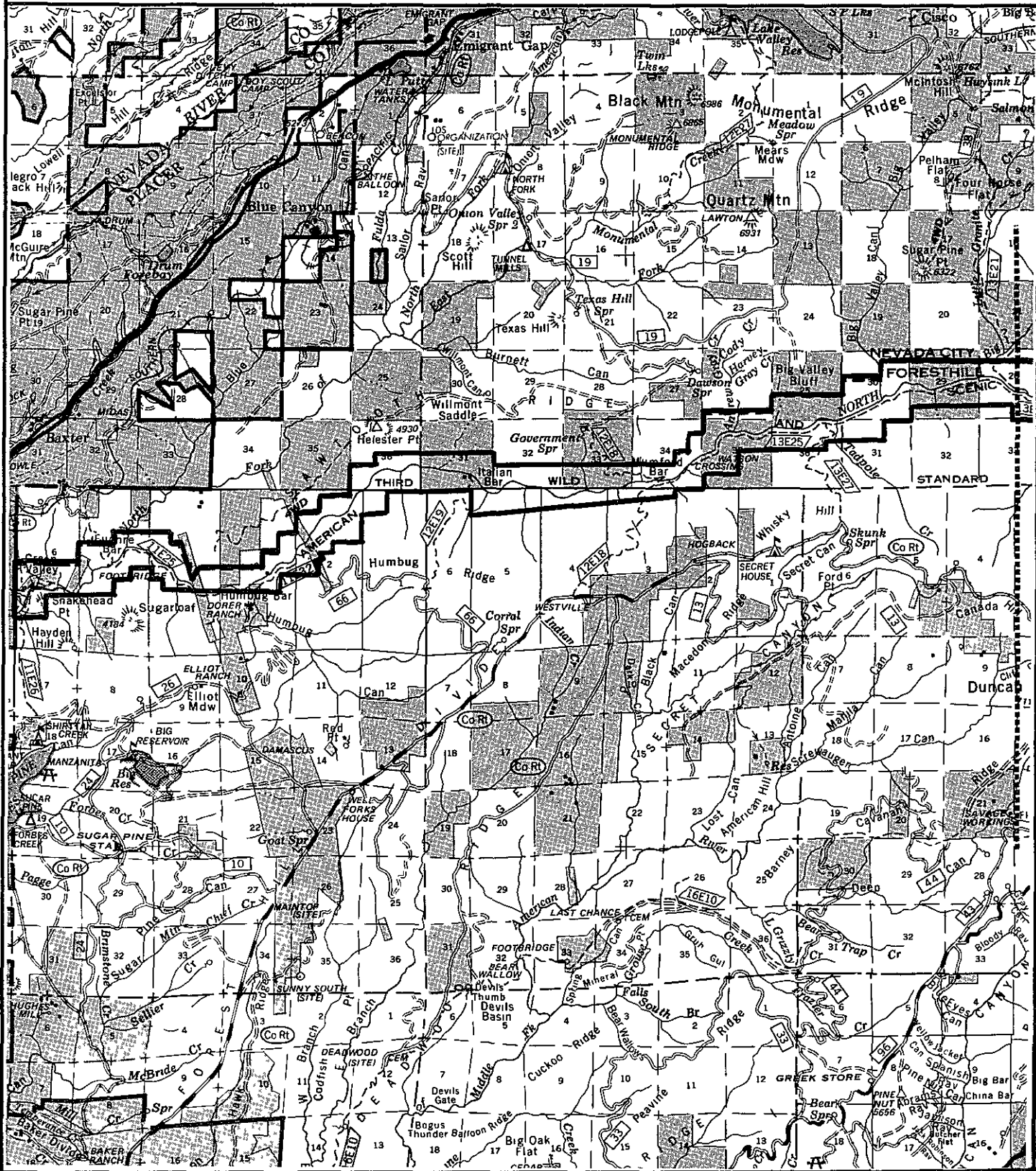
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 082

NORTH FORK

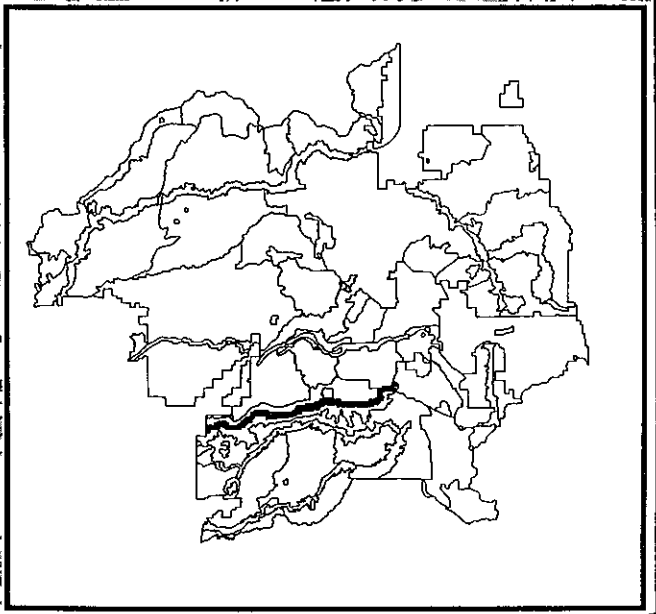
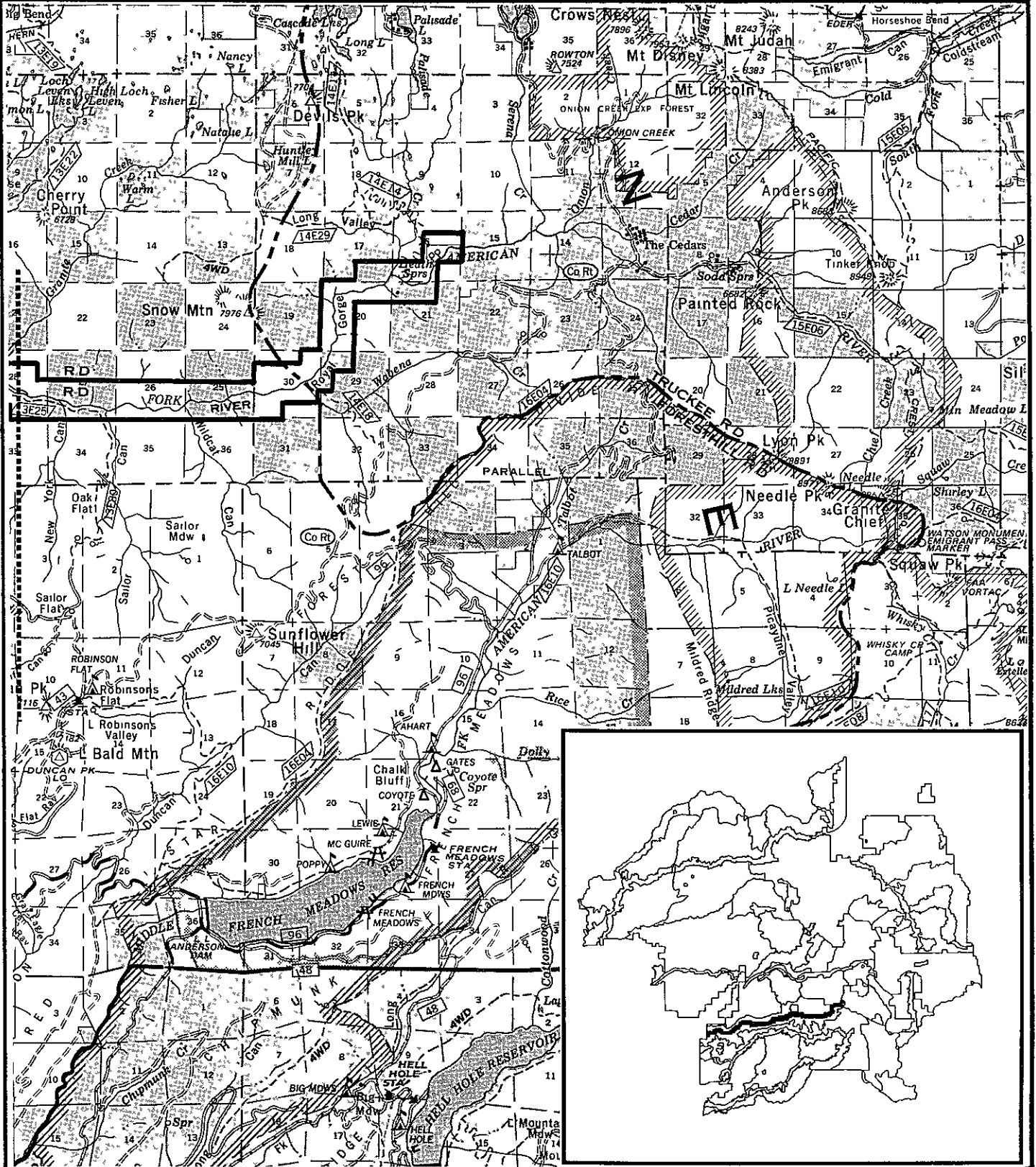
T16N, R13E



MANAGEMENT AREA 082

NORTH FORK

T16N, R13E



082 NORTH FORK

9,455 GROSS ACRES

5,788 NFS ACRES

I. DESCRIPTION

This management area (**MA**) is comprised of that portion of the North Fork American Wild River that is administered by the Forest Service. It extends from Giant Gap, about 1,800 feet in elevation, easterly to the vicinity of Heath Springs, about 5,000 feet, for a distance of 26 miles. (The Wild River is 38.3 miles in length, including the area under the jurisdiction of the Bureau of Land Management [BLM].) The North Fork became a component of the Wild River System via Public Law 95-625 on November 10, 1978. The River Management Plan was signed by the Regional Forester and the BLM State Director in October 1979. The plan was adopted following its publication in the Federal Register on September 4, 1980.

The **MA** lies on both the Forest Hill and Truckee Ranger Districts. The Wild River drainage area is 241 square miles, most of which is within the Tahoe National Forest. The study report of January 1978 contains a detailed description of resource information.

In the eastern portion of this MA, there is a scenic easement one-fourth mile on each side of the North Fork of the American River. The scenic easement was donated to the Forest Service by the North Fork Association as part of the negotiations that led to establishment of the North Fork of the American Wild River boundary. There is no public access through North Fork Association lands along the North Fork of the American River from the County road to Heath Falls (Sections 14, 15, and 16, in **MA 79**, Cedars).

Emphasis species include rainbow, brown, and brook trout, and the riparian group. A wild trout plan prepared by the California Department of Fish and Game and a wild trout habitat management plan prepared by the Forest Service in cooperation with the California Department of Fish and Game, form the basis for fisheries management in the North Fork.

The Palisades, Wabena, and Heath Falls trails were constructed during the mid-1980's to allow access to the upper reaches of the Wild River. These trails have provided an alternative to access through North Fork Association properties from the Baker Ranch to Soda Springs Road.

Portions of spotted owl habitat areas **R-1** and **S-1** lie within this MA.

There are 126 acres of wetlands. There are 5,724 acres of unsuitable productive forest land.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The Wild River Management Plan addresses issues, concerns, and opportunities identified in the study report. Major areas included protection of river values (free-flowing character, inaccessibility except by trail, unpolluted waters, outstanding features, naturalness), recreation emphasis, easement and land acquisition, transportation management, vegetation management, minerals management, and wildlife and fish management.

There are several concerns pertaining to actual accomplishment of established guidelines in accordance with the Wild River Act and the North Fork American Wild River Management Plan. They include:

- A** **Unidentified property** lines will be difficult to establish. This may be an obstacle to scenic easement or trail right-of-way acquisition, resolution of structure ownership in several cases, and/or on a recurring basis, determining ownership to routinely administer the area.
- B** Determination of the existence of any valid mining claims.
- C** Determine whether to permit white water rafting if permitted, how should it be managed?

D Non-conforming uses and activities on National Forest and private land. These uses/activities include

1. The use of non-historic dump sites.
2. The misuse of or the non-conforming improvements made to existing cabins on both Forest Service and private lands.
3. The use of an old road access to National Forest land from the Rawhide Mine area
4. The use of motorized equipment to mine on private land along the River.
5. The use of motorized vehicles on National Forest trails to access private land by landowners or lessees

The Forest Service wishes to acquire lands within the boundaries of the Wild River at Heath Falls. These lands are owned by the North Fork Association (N 1/2 of the SE 1/4, Section 16, T 16N, R 14E.). A purchase or exchange would make the scenic Heath Falls available to the public. A 'License Agreement' provides public access to the western 60 acres of the above parcel. This agreement expires December 10, 1989.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is wild river management in accordance with the Wild and Scenic Rivers Act, as amended, and the North Fork American River Wild River Management and Development Plan. The timber is unavailable for regulated timber production.

Acquire the N 1/2 of the SE 1/4 Section 16, T 16N, R 14E., as the opportunity arises.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive nonmotorized
- B Visual Opportunity Objective - Preservation on National Forest System lands. Terms of scenic easements dictate VQO on other lands
- C Transportation Management Policy - Unroaded, Trail access developed according to the North Fork American Wild River Management Plan.
- D Off-Highway Vehicle Restrictions - Closed
- E Forestwide Standards and Guidelines - All apply except 35, 36, 37, 38, 39, 65, and 68

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A2 Wild River Dispersed Recreation
- A6 Closed OHV
- A9 Recreation Management (Private & Other Public Sector)
- A17 Visual Resource Improvement
- C1 Stream Fisheries - Nonstructural improvement and Maintenance
- C7 Late Seral Stage Vegetation Management
- G1 Minerals Management - Locatable
- G4 Minerals Management - Leasable Withdrawals
- J1 Land Adjustments - Retain and Acquire
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L13 Transportation Management, Trails - Restricted Use
- P6 Fire Protection - Wilderness - Wild River

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Difficulty and high costs of establishing property lines are common obstacles in remote areas. Resolve this possible hindrance to accomplishment of objectives on a case-by-case basis. Scenic easements and trail rights-of-way could be acquired without surveys. The expense of actual determination of ownership boundaries must be compared to expected benefits.

The determination of the existence of valid mining claims may include contest action. Schedule efforts to establish status of the mineral estate.

Manage fisheries according to the Wild Trout and the Wild Trout Habitat Management Plans.

Clean up and rehabilitate nonhistoric dump sites.

Determine if cabins are on valid mining claims and ensure they conform to current mining laws.

Rehabilitate old access road, if necessary, and permanently close it.

To eliminate the use of motorized equipment on private land for mining purposes a scenic easement would have to be obtained or the Forest Service would have to acquire land.

The laws on ingress and egress govern access to private properties through National Forest lands. The use of motorized vehicle to do so must be determined on a case-by-case basis.

Acquire the 'Heath Falls' parcel as the opportunity arises.

Develop spotted owl management plans for SOHAs R-1 and S-1.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor scenic easements on private lands, working with private land owners to assure public compliance.

Monitor according to the Wild Trout Habitat Management Plan.

Evaluate the proposal for whitewater rafting for compatibility with Wild River management objectives.

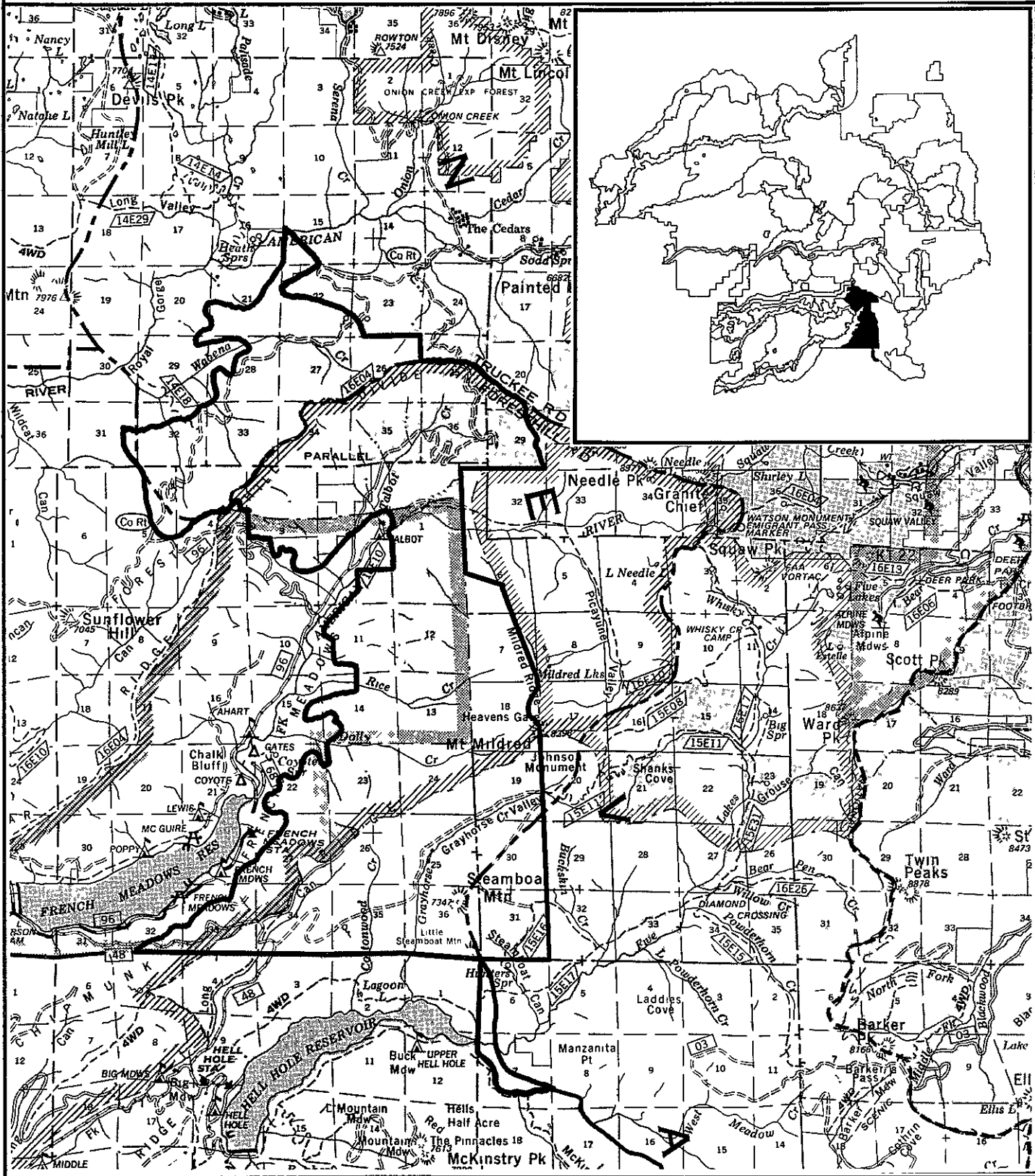
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.

2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 083

WABENA-STEAMBOAT

T15N, R14E



083 WABENA-STEAMBOAT

22,472 GROSS ACRES

11,717 NFS ACRES

I. DESCRIPTION

This management area (MA) is located to the west of the Granite Chief management area. It is bordered on the northwest by the North Fork of the American River and on the south by Hell Hole Reservoir. The Foresthill Divide cuts through the northwest portion of the area. Steamboat Mountain is a prominent feature in the southwest corner of the area. It contains a portion of the French Meadows State Wildlife Refuge. Elevations range from 5,600 feet near Talbot Campground to 8,000 feet west of Lyons Peak. The topography is rugged with moderately dissected slopes ranging from flat to 65 percent. About 20 percent of the area is accessed by roads. The Soda Springs-Baker Ranch County Road is the primary access route through this area. The Overland Emigrant Trail passes through this MA. This area contains approximately 15 miles of the Western States Trail and 6 miles of trail used for the Tevis Cup 100-Mile Ride and Run. The Wabena Trail was constructed through this MA in the mid-1980's to provide access to the eastern end of the North Fork American Wild River from the south. It connects with the Palisades Creek Trail from the north. Private lands in or near Greyhorse Valley have been accessed and harvested.

The Forest Service and American Forest Products Corporation (AFPC) have entered into a cost-share agreement for roads servicing properties in the Wabena Creek, Talbot Creek, and Rice Creek areas. Future cost-share agreements with AFPC and Southern Pacific Land Company are needed to access National Forest System lands in the Greyhorse Valley-Steamboat Mountain areas.

There are portions of the Chipmunk and Sierra Crest Grazing Allotments within the MA. The vegetation varies from high-elevation mixed conifer to red fir, interspersed with many open brushfields and barren areas. Some lodgepole pine can be found in the high valley basins. There are 752 acres of wetlands. There are 72 acres of unsuitable productive forest land. During the last decade, extensive timber harvesting has occurred on both public and private lands. Timber harvesting has progressed through one cutting cycle on the Chipmunk Ridge, Wabena, and Rice Creek parcels. Stands in the eastern and northern parcels near Lyons Peak in Greyhorse Valley remain untreated. There is mining in the Wabena Creek watershed.

The selected emphasis species are deer, pileated woodpecker, spotted owl, rainbow and brown trout, and the riparian and meadow groups.

Portions of spotted owl habitat areas T-1 and U-1 lie within this MA.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Improvement of the Foresthill Divide County Road has been a controversial topic for several years. There is a concern that improving the road standard will generate an increase in public use and impact private lands. The County road is a Forest highway route, therefore proposed development projects must meet program criteria and be approved by the Federal Highway Administration, Caltrans, and the Forest Service. There is no present economic justification for improving the road beyond the Soda Springs Road intersection in Section 5, T 15N., R 14E.

There are concerns associated with management activities on areas identified as naturally eroding.

Greyhorse-Steamboat area is a highly productive deer summer range, and increased activities could jeopardize the use of this area for deer fawning. The habitat needs to be maintained or enhanced.

Dispersed camping in areas near French Meadows Reservoir, the Middle Fork American River, and the Foresthill Divide Road has caused resource damage, resulting in restricting camping to developed sites and designated camping areas only in these areas. There is an opportunity for continued dispersed recreation.

There is an opportunity for improving forage production by using the transitory range type created by timber harvesting. There is an opportunity to improve wildlife habitat.

The Western States Trail and the Tevis Cup Loop have received extensive public support for classification within the National Trail System. Both trails will be designated National Recreation trails when rights-of-way are acquired.

11. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Range management will be emphasized on the transitory range created by timber harvest.

Wild and Scenic river values will be protected for the Upper Rubicon River from Hell Hole Reservoir and up until such time as eligibility and, if required, suitability studies are completed and new management emphasis developed.

Emphasize wildlife and watershed values when managing in streamside management zones, spotted owl habitat areas, and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuitable for timber production, such as existing recreation development sites, special-use permit areas, etc.

The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention in natural VCO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on a rotation schedule of 80 to 120 years. This latter category includes approximately 3,910 acres. The remaining land within the management area will be similar to the present condition.

Maintain the inner gorge of the North Fork American River as semi-primitive nonmotorized.

Management Plans for the Western States and Tevis Cup National Recreation Trails will be developed during Plan implementation. In the interim, management activities are designed in a manner that will not preclude designation. Although neither trail qualifies for National Historic or Scenic status, the trails do have historic and scenic values to some users. Strong consideration should be given to maintaining the integrity of these qualities in management decisions.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural
- B. Visual Quality Objective - Retention for foreground seen from use areas within the Wild River (MAW), and retention in foreground along the Western States Trail. Partial retention for middle ground viewed from French Meadows and Hell Hole Reservoirs. Partial retention for middle ground viewed from Highway 96 from the south shore of French Meadows Reservoir to the junction with Road 51. Partial retention for foreground as viewed from trailheads and trails into the North Fork American River. Partial retention in immediate foreground as viewed from the Tevis Cup trail.

Partial retention from Middle ground viewed from Road 51 from the junction with Highway 96 to Talbot Campground turn-off. Modification for remainder.
- C Transportation Management Policy - Cooperate with Placer County and Federal Highway Administration to develop the Foresthill Divide Road to the standard needed for resource management. The Forestwide Standards and Guidelines are applicable for National Forest System roads.
- D Off-Highway Vehicle Restrictions - Designated routes only summer. Open over-the-snow.
- E Forestwide Standards and Guidelines - All apply.
- F Develop a management plan for the Western States and Tevis Cup Trails.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)

- D5 Range Management- Transitory Range Type
- D7 Range Improvement- Nonstructural (Permanent and Transitory)
- D8 Range Improvement- Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting- Existing Stands
- E5 Commercial Thinning- Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F3 Flow Timing Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management- Locatables
- G2 Minerals Management- Locatable Withdrawals
- G3 Minerals Management- Leasables
- G4 Minerals Management- Leasable Withdrawals
- G5 Minerals Management- Saleables

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development- Road Construction/Reconstruction
- L2 Multiresource Road Access Development- Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike
- L7 FA&O Construction/Reconstruction
- L9 Transportation Management, Roads- Regulated Use
- L10 Transportation Management Roads- Closed
- L11 Transportation Management, Roads Obliterated
- L12 Transportation Management, Trails - Closed
- L13 Transportation Management Trails Restricted Use

- P1 Fire Protection - Continuous F

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Evaluate the area's importance as a deer fawning site, and with a level of site visit and improve management of the range to develop site owl management plans for SOHA T-1 and U-1.

Continue to manage for timber and other resources. Continue to restrict camping near French Creek Reservoir, the Middle Fork American River, and along the Foresthill Divide Road to developed sites and designated camping areas only.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor soil erosion from the Wabena Sale when logging is completed

Monitor effects of increased access on the deer habitat and herd productivity.

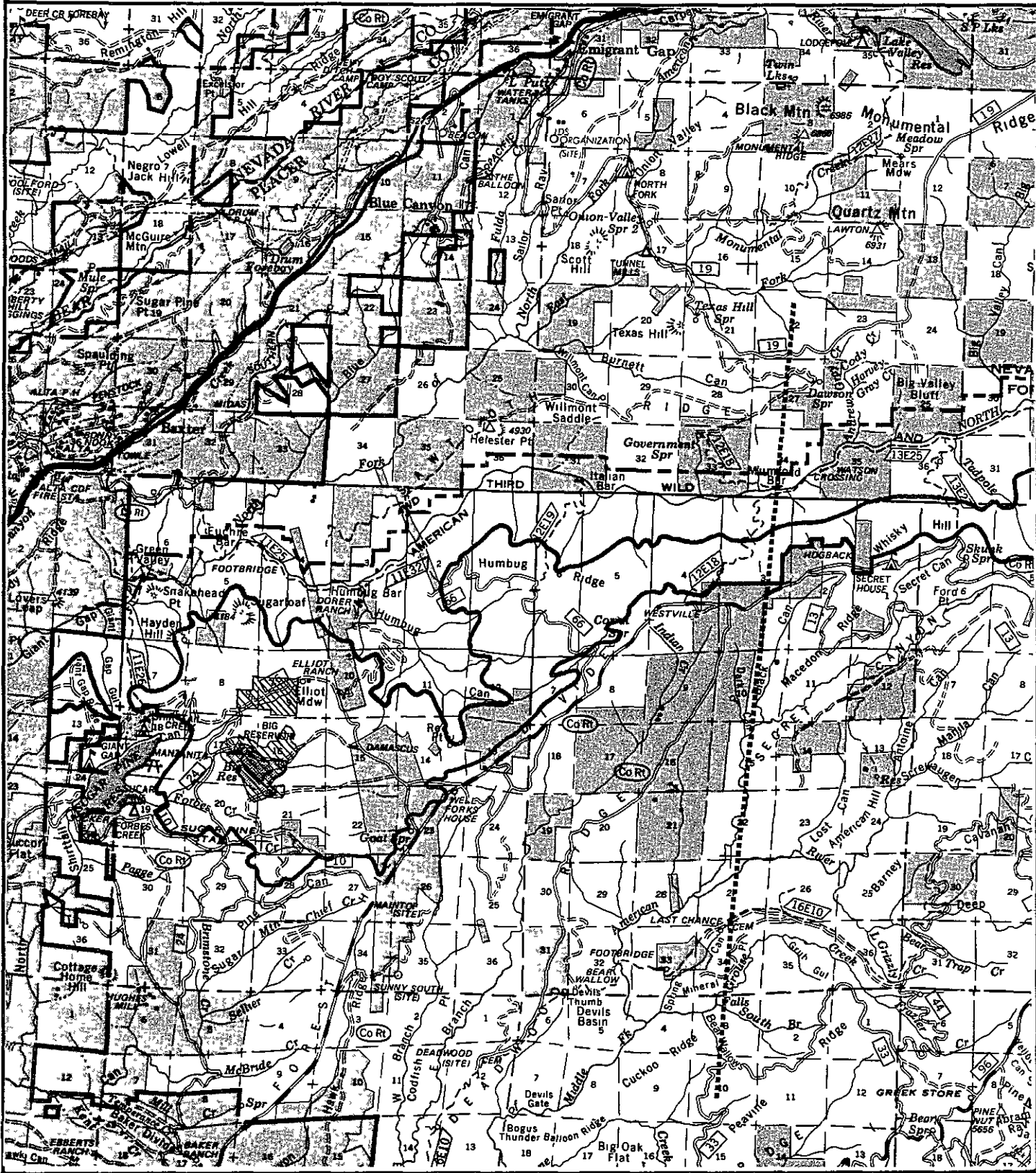
Cooperate with Placer County in evaluating the improvements needed to bring the Soda Springs-Baker Ranch Road up to prudent standards for resource management and planned recreation uses.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 084

HUMBUG-SAILOR

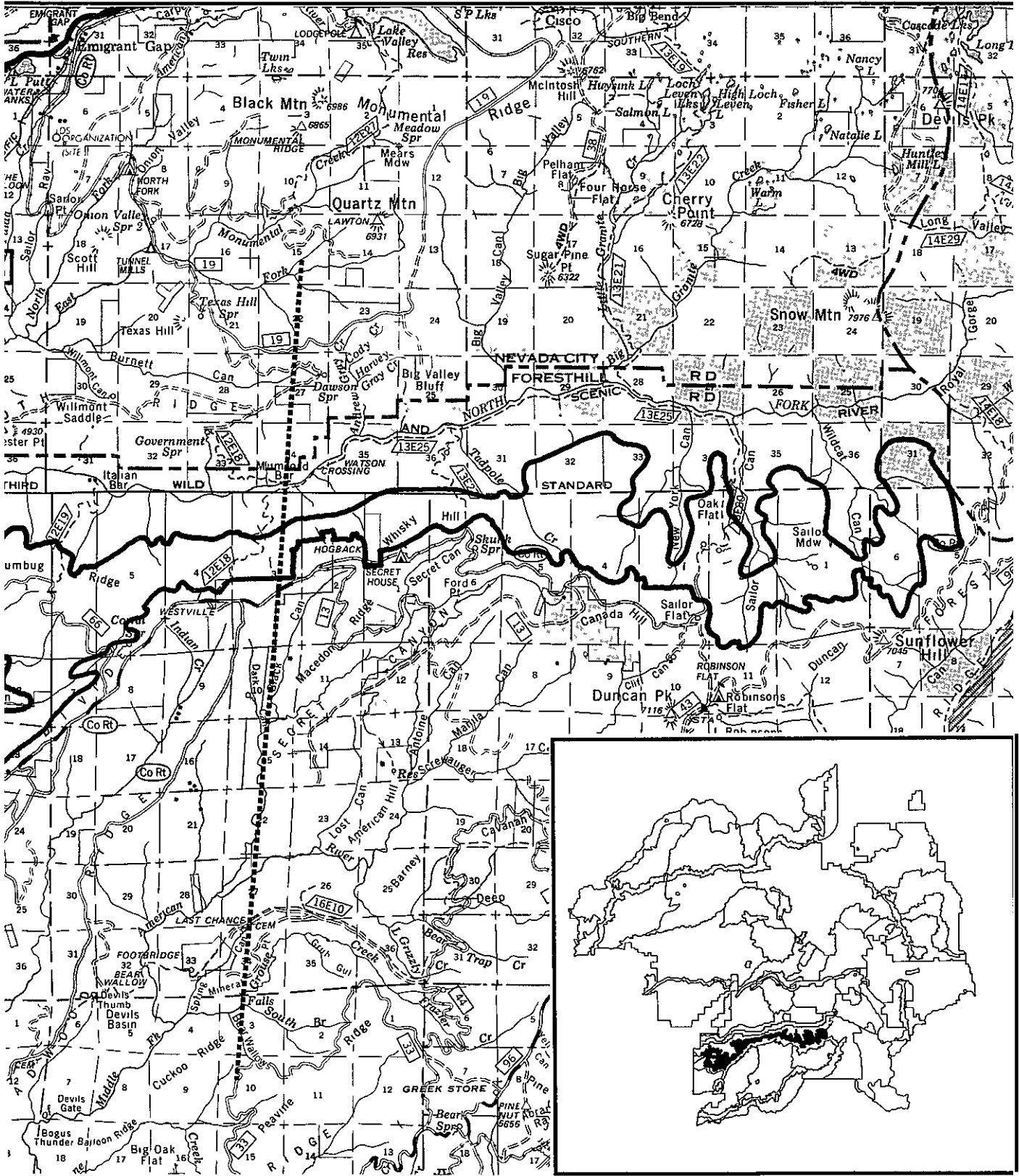
T15N, R11E



MANAGEMENT AREA 084

HUMBUG-SAILOR

T15N, R11E



084 HUMBUG SAILOR

20,238 GROSS ACRES

17,554 NFS ACRES

I. DESCRIPTION

This management area (MA) is located on the gently to moderately sloped uplands overlooking the North Fork of the American River canyon. The MA extends from Giant Gap Ridge on the west to Wildcat Canyon on the east. Elevations range from 3,600 feet near Giant Gap to 7,000 feet on the Forest Hill Divide. There are 489 acres of wetlands. There are 5,377 acres of unsuitable productive forest land.

Two large fires (McKenzie Mill 1936 and Volcano, 1960) have burned through this area in the last 50 years. Timber harvesting is entering its third cycle on the accessible ridges. Stands in the Sailor Meadow and Wildcat Canyon area remain untreated. Vegetation on the western half of the MA consists of pure pine or mixed conifer plantations on Humbug Ridge and Big Reservoir watersheds. Mixed conifer stands alternate with hardwoods or brush in the North Fork canyon lands. In the eastern half, vegetation ranges from brush and mixed conifer stringers in the canyons to red fir in the higher elevations.

Approximately 75 percent of this MA is accessed, with Sailor Canyon and Wildcat Canyon being largely unaccessed. Trailheads leading into the North Fork American Wild River include the Green Valley, Italian Bar, Mumford Bar, Beacroft, and Sailor Trails. Other activities include moderate amounts of off-highway vehicle use and mining.

Portions of the Sugar Pine and Duncan Sailor Range Allotments are located within this MA.

Selected emphasis species include deer, spotted owl, pileated woodpecker, rainbow, brown and brook trout and the riparian, meadow, and hardwood groups. Portions of spotted owl habitat areas R-1, S-1, and T-1 lie within this MA. The western extremity of the MA, generally between Hayden Hill and the Forest boundary, is key winter deer range for the Blue Canyon Deer Herd.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The continuous fuels on the long canyon slopes of the North Fork and in the plantations pose serious concerns for controlling any fire started in the vicinity. There is a concern about the protection and regulation of the even-aged Volcano and Humbug Plantations. Regeneration in the high-elevation mixed conifer and red fir timber types continues to be a concern.

The watersheds directly above Sugar Pine and Big Reservoirs are important for supplying high-quality water for fisheries, municipal water systems, and for outdoor recreation.

A primary concern is with the area identified as key winter deer range. The concern is the disturbance of the deer herd during a critical life cycle period (Nov.-Apr.). There is an opportunity to improve wildlife habitat, especially the key winter deer range. Good opportunities exist for accessing northslope stands, especially in the vicinity of Sailor Meadow. An opportunity exists to use the transitory range created by timber harvesting and to manage hardwoods for wildlife habitat and fuelwood production.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitory range created by timber harvest. Emphasize wildlife and watershed values when managing in streamside management zones, key winter deer range, spotted owl habitat areas, and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuitable for timber production, such as existing recreation development sites, special-use permit areas, etc.

For the Sugar Pine and Big Reservoir watersheds, the high-elevation (above 5,500 feet) mixed conifer and red fir timber types, and the North Fork watershed, emphasize watershed protection and intensive timber management.

For Sailor Meadow and the associated meadows, special cutting practices will be used to maintain the wildlife and scenic qualities of this area.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-size stands of the mixed conifer type. Manage these stands on a short rotation schedule of 50 to 120 years. The desired future condition in red fir and lodgepole stands is even-aged plantation through large sawtimber-size trees, rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with Retention Initial VQOs and Variety Class A status) will be similar in condition to the

redfir and lodgepole stands The remaining high elevation mixed conifer stands will be managed on a short rotation basis This latter category includes approximately 1,201 acres The remaining land within the management area will be similar to the present condition

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural
- B Visual Quality Objective - Partial retention for foreground as viewed from trailheads and trails into the North Fork American River, and for foreground viewed from Sailor Meadow and its associated meadows Partial retention for middle ground as viewed from Big Valley Bluff and Lover's Leap. The VQO will be retention for foreground areas seen from use areas in the Wild River (MA#082) Modification for the remainder of the area Maximum modification will be allowed on a case-by-case basis.
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply On key winter deer range. access will be regulated in order to protect deer
- D Off-Highway Vehicle Restrictions- Designated routes only All routes into the American (MA#087) and the North Fork of the American River (MA #082) are closed to motorized vehicles Permits may be granted for exceptions On key winter deer range, closed November 1 to May 1 This restriction can be amended if weather conditions are such that deer are not on the winter range
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A5 Restricted OHV
- A6 Closed OHV
- A0 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries- Nonstructural Improvement and Maintenance
- C2 Stream Fisheries- Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- c7 Late Seral Stage Vegetation Management
- C8 Structural Habitat improvement and Maintenance

- D2 Range Management- Permanent Range Type (Extensive Management)
- D5 Range Management- Transitory Range Type (Extensive Management)
- D7 Range improvement- Nonstructural (Permanent and Transitory)
- D8 Range Improvement- Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven-Age Cutting Method
- E10 Artificial Stand
- E11 Natural Stand
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Resource Improvement
- F3 Flow Timing Improvement
- F4 Soils Resource improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saieables

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike
- L6 Trail Construction/Reconstruction - Special Uses
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Develop **specific** fire protection management plans for areas with **extensive** plantations.

Reduce the threat of a large fire emerging from the canyons or reaching an **uncontrollable** size in the plantations by breaking up both the lateral and **vertical continuity** of **fuels** in plantations. Resolve both the silvicultural and fire concerns by gradually **converting** the plantation into **even-aged** stands of various age **classes**. This practice will involve **some** tradeoffs of timber growth (**regenerating** prior to **rotation** age) in order to achieve the goal of a **regulated** age **class** distribution.

Use the **seed** step **shelterwood** and/or strip clearcutting prescriptions to help ensure true fir regeneration after harvest.

The management emphasis requiring long rotations or continuous **forest** cover reduces the total disturbance at any one **time** in a **critical** watershed to that which would allow maintenance of good water **quality**, including that of the Wild River Access **areas** as policy and project objectives permit.

Continue **transitory** range use by livestock.

Develop **spotted** owl management plans for SOHA's, R-1, S-1, and T-1.

Retain and improve key winter deer range. Manage key winter deer range to provide a **60/40** forage cover ratio.

VII. SPECIFIC MONITORING AND EVALUATION

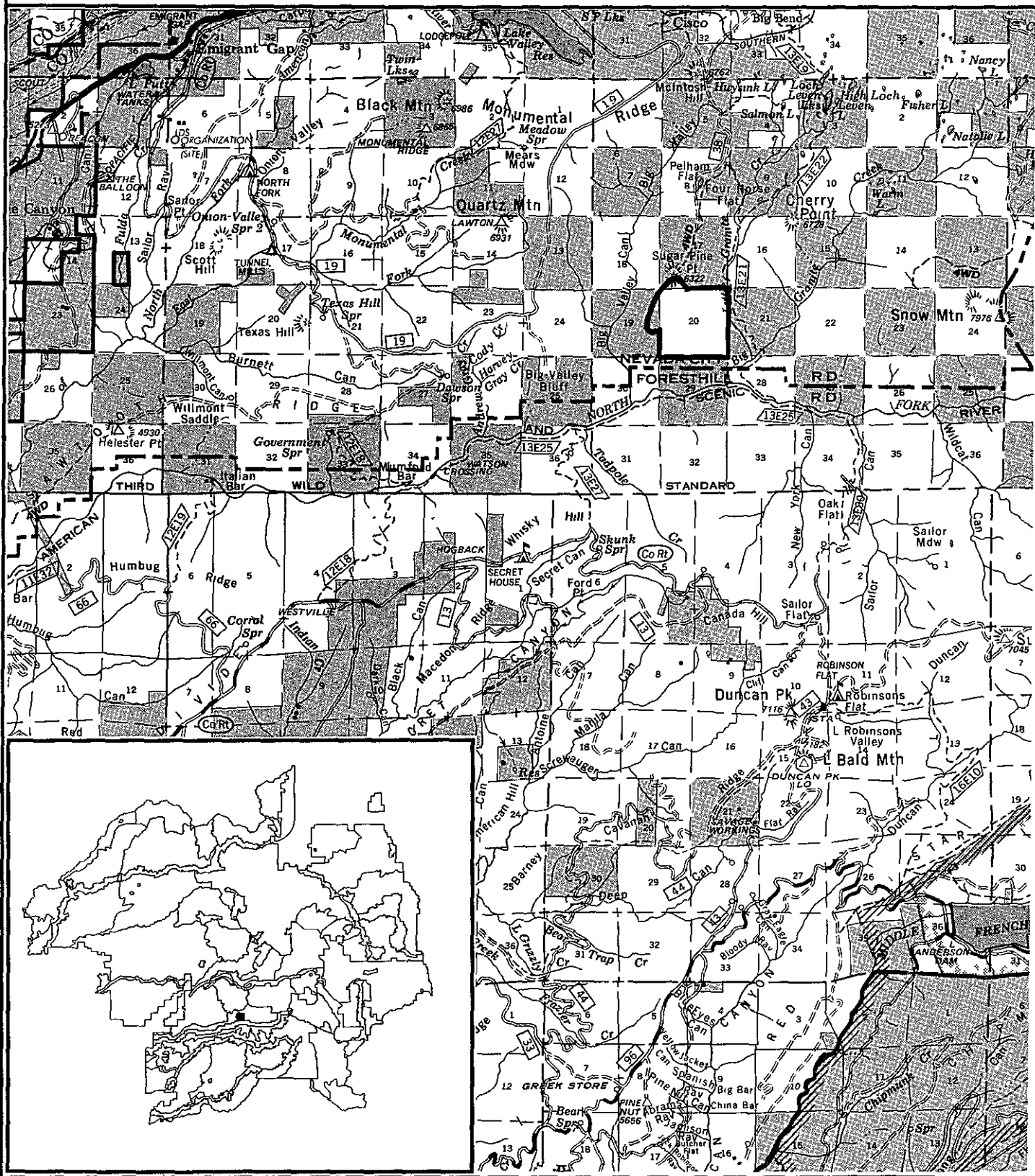
Monitor the **North** Fork of the American Wild RNeer water quality according to established benchmark standards.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to District Directives of Management Practices in Chapter V

MANAGEMENT AREA 085

SUGAR PINE POINT

T16N, R13E



085 SUGAR PINE POINT

625 GROSS ACRES

625 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 4 miles south of Cisco Grove. It is on a steep, north-facing slope on the east side of the canyon of the North Fork American River. The area describes a bowl or amphitheater-like slope with ridges extending south.

Vegetation is a mosaic of mixed conifer (largely ponderosa pine and sugar pine), black oak, and cottonwood. The vegetation is due to a complex topography and fire history. Disturbance by fire has resulted in a succession of brush to mixed conifer and oak conifer to white fir. There are 100 acres of wetlands. There are 100 acres of riparian habitat. The forest is a.

There are no roads in the MA, although a primitive road provides access to nearby Sugar Pine Point.

The selected emphasis species is deer.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

A management concern is to inventory and establish acres which contribute to the preservation of examples of all significant natural ecosystems for purposes of research and ecological study and to provide gene pools. This MA appears to qualify for designation as a Research Natural Area.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to manage for the preservation and protection of the natural ecological site. Through procedures outlined in FSM 4063, evaluate the land as a potential Research Natural Area representing natural resources. It is to be included in the Snow Mountain MA to its boundary for classification by the Chief of the Forest Service as a Research Natural Area. Any portion of the MA not designated as RNA will be managed as part of the Snow MA (#81).

The area is unsuited for timber management.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/ .

- A. Recreation Opportunity Spectrum - semi-primitive nonmotorized.
- B. Visual Quality Objective - Preservation
- C. Transportation Management Policy - Closed
- D. Off-Highway Vehicle Restrictions - Closed
- E. Forestwide Standards and Guidelines - The only Forestwide Standards and Guidelines which apply are 1, 3, 9, 17, 22, 23, 60, 64, 67, 68, 82, 83, and 84

V. AVAILABLE MANAGEMENT PRACTICES 2/

A6 Closed OHV

A16 Research Natural Areas

G2 Minerals Management - Locatable Withdrawals

G4 Minerals Management - Leasable Withdrawals

J1 Land Adjustments - ~~Retain~~ and Acquire

L4 Trail ~~Construction~~ ~~Reconstruction~~ - Foot & Equestrian Traffic Only

P4 Fire Protection - Research Natural Areas

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Recommend this MA as a Research Natural Area and manage as such until designation. Portions of the MA not designated as a Research Natural Area will be allocated to MA 81 (Snow)

VII. SPECIFIC MONITORING AND EVALUATION

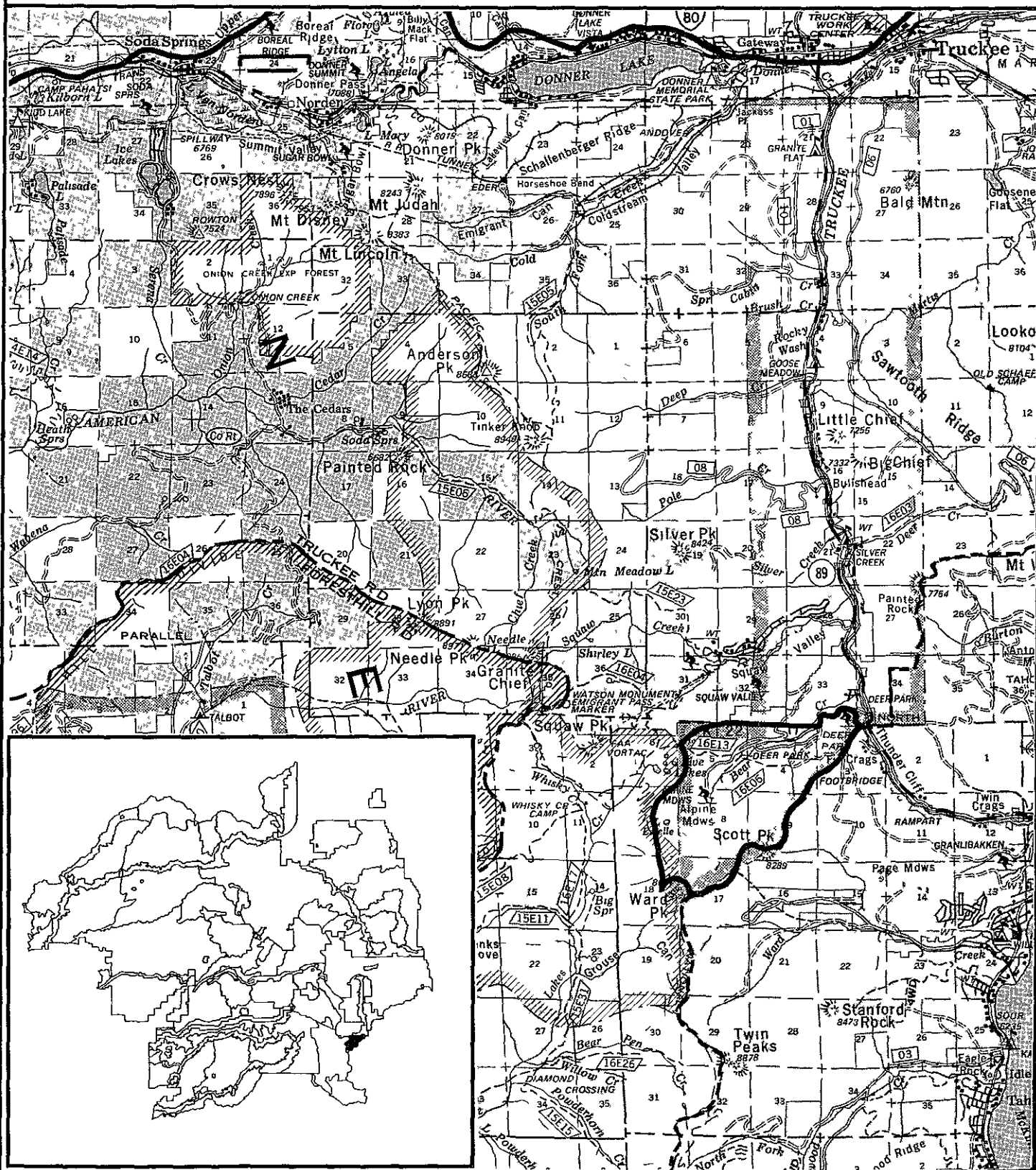
Forest ~~Service~~ and universities may monitor for research purposes

1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 086

SCOTT

T15N, R16E



086 SCOTT

2,809 GROSS ACRES

1,574 NFS ACRES

I. DESCRIPTION

This management area (MA) is located along the Bear Creek drainage. The elevation ranges from 6,200 to 8,500 feet. Most of the terrain is steep with vegetative cover sparse along the crest to heavily timbered on the slopes just above the subdivisions along the valley floor and lower slopes. Slope, aspect, and snow cover combine to make the land capable of being used and developed for downhill skiing. There are 158 acres of wetlands. There are 1,517 acres of unsuitable productive forest land. Alpine Meadows Ski Area is located within this area. They have expressed a desire to expand onto additional National Forest System lands. The Deer Park Ski Area closed for downhill skiing in 1984, and consequently Alpine Meadows is currently using the base facilities as a remote parking area.

Alpine Meadows Ski Area has developed the beginning of a mass transit system. The area is contiguous with skiable terrain managed by the Lake Tahoe Basin Management Unit (Ward Valley to the south) and terrain managed by Squaw Valley Ski Corporation (to the north).

A minor portion of the area is within the legal jurisdictional boundaries of the California-Tahoe Regional Planning Agency.

There are several subdivisions on private land within the area.

The area contains a proposed campground, the trailhead for the Five Lakes access trail (one of the most popular day-hikes on the Forest), as well as the corrals for Alpine Stables. Also within the area are special-use permits for the Alpine Meadows Fire Department/Water District, telephone lines, cable television transmission lines, powerlines, and road uses.

The area is part of the Sierra Crest Grazing Allotment.

The selected wildlife emphasis species are deer, rainbow trout, and the riparian and mountain meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Ski industry expansion represents the primary opportunity and raises the principal issues. Expansions are a concern in relation to traffic, community services, and utility capacities, and provides secondary impacts to the Lake Tahoe Basin. Expansion in or near the Lake Tahoe Basin is dependent upon access via Highway 89 and is likely to face difficult obstacles.

The opportunity exists to use developed National Forest System parcels as an exchange base for Tahoe National Forest administrative sites.

Numerous requests have been made by the homeowner associations to use NFS lands for community support facilities such as parks, tennis courts, firehouses, etc. Some residents have expressed concern that management of NFS lands could negatively affect their NFS 'green belt' that serves as parks, visual screen, or open recreation area for the neighborhood.

There is a concern by the community that the Forest Service will force the Alpine Stables to move from their present location.

Managing timber within developed ski areas is difficult beyond basic stand maintenance. Those timber stands above the Alpine Meadows subdivisions are difficult to manage because of the terrain and lack of access.

Dispersed camping has caused resource damage, resulting in restricting camping to developed sites and designated camping areas only.

There is a concern for maintaining visual quality. A focal point of this concern is the Highway 89 middleground. This road is included in the Master Plan of State Highways Eligible for Official Scenic Highway Designation and thus requires special consideration to preserve the character of its scenic backdrop.

There is an opportunity to further develop mass transit to this area to reduce peak hour traffic congestion.

111. **RESOURCE MANAGEMENT EMPHASIS**

Development of private sector ski area maintenance, operation, and planning will be emphasized during the planning period. This may include development of bed space at the ski base facility. Project-level planning will coordinate increased capacities with off-site capabilities.

This area is unsuited for regulated timber production.

Consider other recreational uses of the area. Evaluate the long-term location of the Alpine Stables through a project-level environmental analysis. Evaluate any off-site impacts of the development of the Bear Creek Campground via an environmental analysis. Consider in appropriate detail any potential impacts to private property in this management area.

Emphasize coordinated management to maintain a predominantly natural landscape.

The desired future condition will resemble the unit's existing condition, roaded-natural appearing, except where ski expansion is approved. In those areas where base facilities are approved, there will be a shift from roaded natural appearing to rural classification as development occurs. New base facilities will be rural in character. Upslope ski runs and facilities should be subordinate to the overall landscape. The expansion should only happen in coordination with the development of adequate support services.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A** Recreation Opportunity Spectrum - Roded natural: rural for base facilities of ski areas and for the private land within the area.
- B** Visual Quality Objective - Partial retention for upslope facilities and ski runs. Modification for base facilities and campgrounds. Modification within the developed sites. The sites will, however, meet the partial retention VQO when viewed as middle ground from travel routes and other occupancy sites. Partial retention for acres seen in the foreground from subdivisions.
- C** Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D** Mf-Highway Vehicle Restrictions. Designated routes only, winter and summer, except as otherwise authorized by special-use permit.
- E** Forestwide Standards and Guidelines - All apply.
- F** Other. Project-level analysis will need to assess the capabilities of the support communities and off-site impacts of further developments.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1** Nordro Cross-County Skiing
- AS** Restricted OHV
- A8** Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9** Recreation Management (Private & Other Public Sector)
- A10** Downhill Skiing
- A12** Downhill Skiing Planning, ES/EA, Development
- A13** Development or Rehabilitation of Private & Other Public Recreation Facilities

- D2** Range Management - Permanent Range Type (Extensive Management)
- D7** Range Improvement - Nonstructural (Permanent and Transitory)
- D8** Range Improvement - Structural (Permanent and Transitory)

- F1** Water Resource Improvement
- F4** Soils Resource Improvement

- G1** Minerals Management - Locatable
- G2** Minerals Management - Locatable Withdrawals
- G3** Minerals Management - Leasable
- G4** Minerals Management - Leasable Withdrawals

- J2** Land Adjustments - Limited

L2 Multi-resource Road Access Development - Road Construction/Reconstruction
 L4 Trail Use / Recreation - Fire & Emergency Non Traffic Only
 L8 Management - Open
 L9 Transportation - Regular Use
 L10 Transportation - Closed
 L11 Management of Roads - Obliterated
 L13 Transportation Management of Trails. established

P2 Fire Protection - High Country Non-Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Most of the issues and concerns will be addressed and resolved in environmental analyses for the individual ski industry expansion proposals. These analyses will be coordinated with the Lake Tahoe Basin Management Unit.

The development of additional developed recreation sites (camping and picnicking) will take precedence over continued use of the Bear Creek site by the Alpine Springs Water District.

Continue to restrict camping to developed sites and designated camping areas only.

Encourage the ski areas to use mass transit to support further expansion. Encourage development of overnight facilities at the ski resorts to cut down peak traffic flows as appropriate.

Timber is unsuited for regulated production in the area because of ski area special-use and other recreational developments.

Deny requests for the use of National Forest System parcels for community support facilities. It is the responsibility of developers, in consultation with county planning agencies, to provide for 'greenbelts' and parks for communities. It is not a Forest Service responsibility to provide subdivision amenities. However, the Forest Service will continue to analyze the effects of off-site impacts on adjacent lands during project level-planning.

Consider visual quality in any land management activity in this MA, including the continued use by Alpine Stables (a site currently in conflict with visual standards) and ski area expansion. Continue to place all utility lines underground due to visual and avalanche considerations.

Although the Forest Plan will be revised in 10-15 years, we expect that the lands allocated currently for winter sports at Alpine Meadows will continue well beyond the initial Plan period.

VII. SPECIFIC MONITORING AND EVALUATION

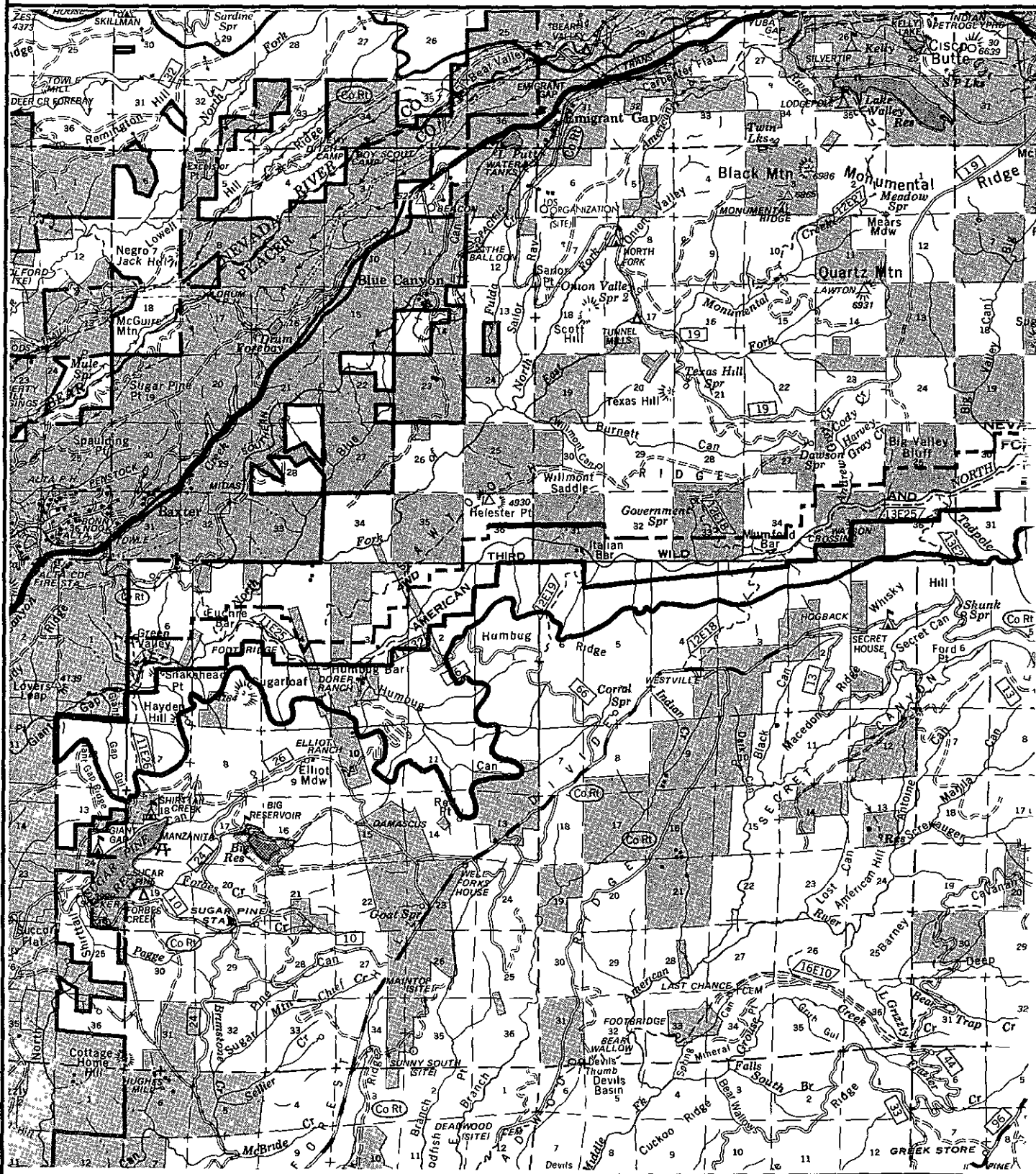
Monitor the snow drifting on the leeward side of the electronic site and determine to what extent improvements may be adversely affecting the ski area and what effects future expansion of the site may produce. (See MA 093)

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 087

AMERICAN

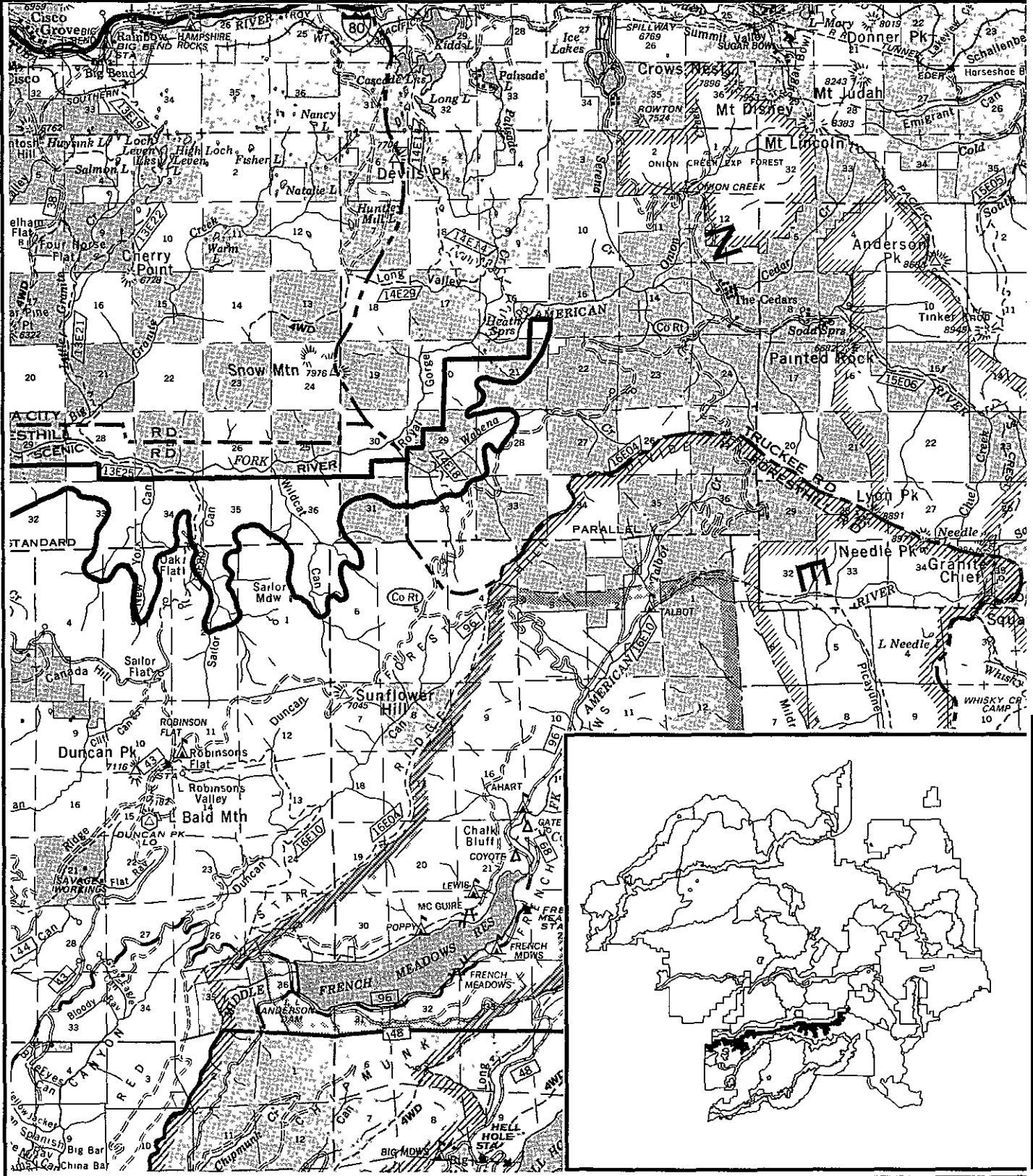
T16N, R14E



MANAGEMENT AREA 087

AMERICAN

T16N, R14E



087 AMERICAN

10,181 GROSS ACRES

9,781 NFS ACRES

I. DESCRIPTION

This management area (MA) is located along the northern boundary of the Foresthill Ranger District, and extends from Giant Gap Ridge to the east boundary of the North Fork American Wild River near Heath Springs. It abuts the south boundary of the Wild River and includes the inner canyon portion of the river. Elevations range from 2,400 feet near Giant Gap to 6,400 feet just east of Wildcat Canyon. Topography is moderately rugged to deeply dissected. Slopes ranging from 40 to 80 percent are common. There are 275 acres of wetlands. There are 4,564 acres of unsuitable productive forest land.

One large fire (Volcano, 1960) has burned through this area in the last 50 years. Timber stands in the Humbug Canyon and the North Fork American River Canyon remain relatively untreated. Vegetation on the western half of the MA consists of pure pine or mixed conifer stands interspersed with hardwood stands and brush fields. In the eastern half, vegetation ranges from brush and mixed conifer stringers in the canyons to red fir in the higher elevations.

The MA is essentially unroaded. Access is primarily via the Dorer Ranch Road, which accesses private property and trails traversing through this MA. These trails include the Green Valley, Italian Bar, Mumford Bar, Beacroft, Sailor, and Wabena Creek Trails.

Portions of the Sugar Pine and Duncan-Sailor Range Allotments are located within this MA.

Selected emphasis species include spotted owl, pileated woodpecker, rainbow and brown trout, and the riparian group. Portions of spotted owl habitat areas R-1, S-1, and T-1 lie within this MA. The western extremity of the MA, generally between Hayden Mill and the Forest boundary, is key winter deer range for the Blue Canyon Deer Herd.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The continuous fuels on the long canyon slopes of the North Fork American RNEr pose serious concern for controlling any fire originating in the MA.

Management for visual quality, recreation, and maintenance of roadless characteristics are public concerns for this area.

Disturbance of deer during a critical life cycle period (Nov-Apr.) is another concern, as is protection of spotted owl habitat. There is an opportunity to improve wildlife habitat, especially the key winter deer range.

III. RESOURCE MANAGEMENT EMPHASIS

Resource management emphasis is to maintain a semiprimitive nonmotorized natural forest setting that combines dispersed recreation, watershed protection, wildlife habitat management, livestock grazing, and visual quality. Timber is unavailable for regulated timber management.

The future vegetation of the MA will remain relatively unchanged from the current natural appearance.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Semi-primitive nonmotorized
- B. Visual Quality Objective - Retention
- C. Transportation Management Policy - Closed
- D. Off-Highway Vehicle Restrictions - Closed
- E. Forestwide Standards and Guidelines. All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic ~~Cross-Country~~ Skiing
- A6 Closed ~~OHV~~
- A8 Developed Recreation & Interpretive ~~Service~~ Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A17 Visual Resource Improvement

- C1 Stream Fisheries- ~~Nonstructural~~ Improvement and Maintenance
- C2 Stream Fisheries- ~~Structural~~ Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession ~~Vegetation~~ Management
- c7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management- Permanent Range Type (Extensive Management)
- D5 Range Management- Transitory Range Type (~~Extensive~~ Management)
- D7 Range Improvement- Nonstructural (Permanent and Transitory)
- D8 Range Improvement. Structural (Permanent and Transitory)

- Ft Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management- Locatable Withdrawals
- G3 Minerals Management- Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management- ~~Seasables~~

- J1 Land Adjustments - Retain and Acquire

- L5 Trail ~~Construction/Reconstruction~~ - Foot, Equestrian, and Trailbike
- L6 Trail ~~Construction/Reconstruction~~ - Special Uses
- L7 ~~FABO Construction/Reconstruction~~
- L10 Transportation Management, Roads - Closed
- L12 ~~Transportation~~ Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection - ~~Continuous~~ Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Develop and implement specific fire protection management plans to reduce ~~the~~ threat of a large fire emerging from the canyons or reaching an uncontrollable size.

Unscheduled timber ~~harvest~~ may be ~~practiced~~ on lands unsuited ~~for~~ timber production. Do not develop roads close to off-highway vehicles. Maintain an unregulated, unrooded, and natural forest setting to ensure a primitive recreation experience, scenic visual quality, and good water ~~quality~~. Continue transitory range use by livestock.

Retain and improve key winter deer range and maintain old growth timber in spotted owl habitat areas. Manage key winter deer range to provide a 60/40 forage-cover ~~ratio~~. Develop ~~spotted owl~~ management plans for SOHA's R-1, S-1, and T-1.

VII. SPECIFIC MONITORING AND EVALUATION

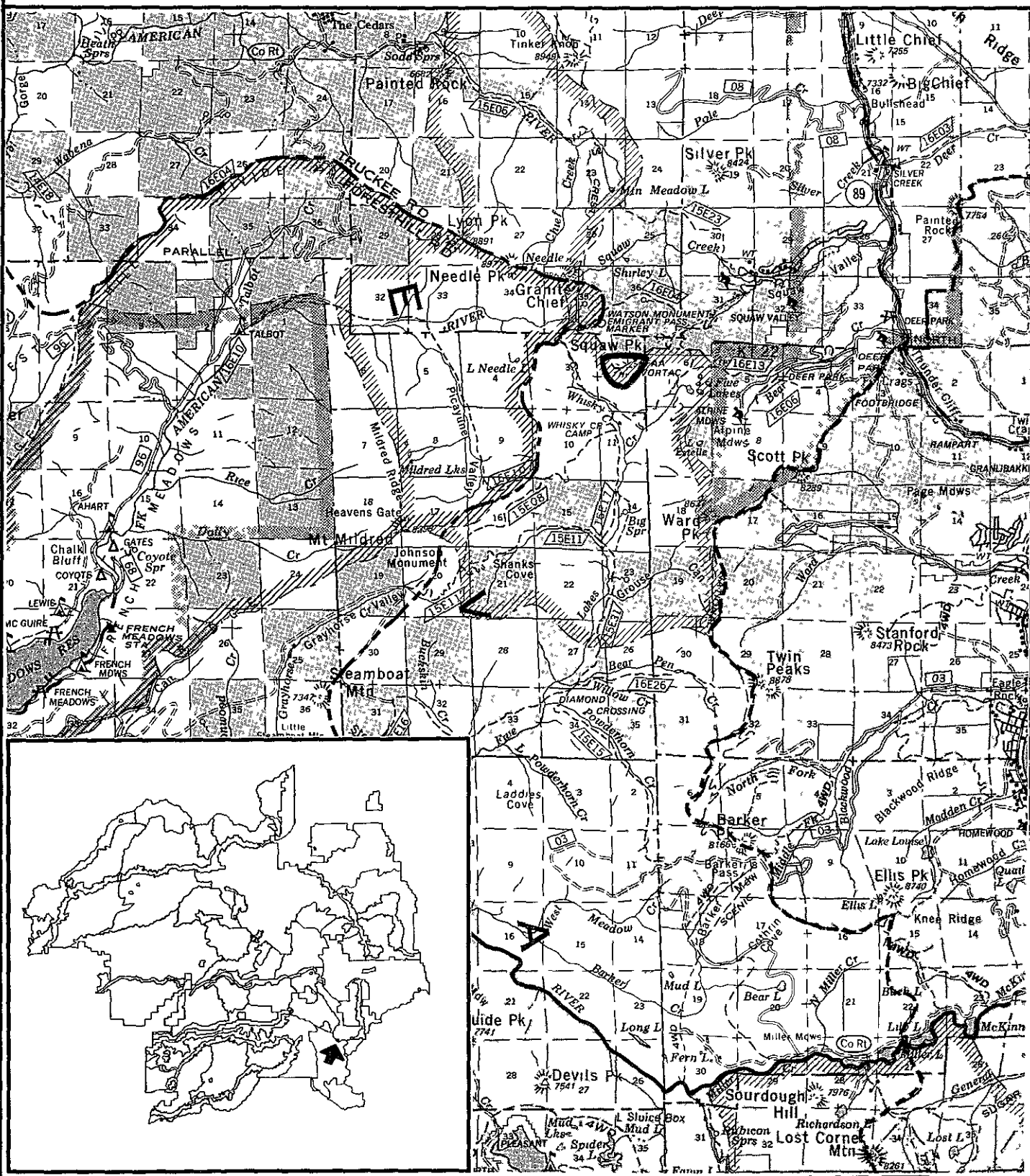
Monitor ~~the~~ North Fork of the American Wild River water quality according to established benchmark standards.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete ~~Descriptions~~ of Management Practices in Chapter V.

MANAGEMENT AREA 088

SQUAW PEAK

T15N, R15E



088 SQUAW PEAK

17 GROSS ACRES

17 NFS ACRES

I. DESCRIPTION

This management area (MA) is located on Squaw Peak above Squaw Valley at an elevation of 8,885 feet. The Forest Service has a communications repeater, the Federal Aviation Administration operates an air navigation aid, and Western Union has a microwave relay station on this site.

This barren area has been used as an electronic site since 1960. Access is from Squaw Valley and acquisition of a road right-of-way easement is needed. Access in winter is by ski lift. Power is available at the site. There is an electronic site plan.

There are no wetlands. There are 17 acres of unsuitable productive forest land. There are no selected emphasis species.

Downhill skiing is allowed in the eastern portion of the MA under a ski slope special-use permit issued to Squaw Valley Ski Corporation.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Finalizing acquisition of right-of-way to the site is a concern.

There is an opportunity to concentrate compatible electronic uses of National Forest System lands at this and other approved electronic sites.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is use as an electronic site. The MA is unsuited for regulated timber management production.

Allow ski use to continue, to the extent it is not inconsistent with the MA's use as an electronic site.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

A. Recreation Opportunity Spectrum - Rural

B. Visual Quality Objective - Modification. This VQO allows management activities to dominate the characteristic landscape, however, structures and roads should remain visually subordinate when viewed in background. To meet these requirements will in some cases require significant efforts at visual mitigation and project-level involvement of the Forest landscape architect. Some areas, however, might require very little mitigation to satisfy the modification objective. Where proposed installations in this latter category are in a visually prominent location, maximum practical mitigation will still be implemented even if the resultant visual quality will exceed the objective. In other words, the modification VQO will be applied as the base level or minimum acceptable visual quality.

C. Transportation Management Policy - Forestwide Standards and Guidelines apply

D. Off-Highway Vehicle Restrictions - Closed

E. Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A6 Closed OHV
- A10 Downhill Skiing
- A12 Downhill Skiing, Planning, EIS/EA Development

- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables

- J2 Land Adjustments - Limited

- L9 Transportation Management, Roads - Regulated Use

- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The electronic site plan provides guidelines and direction for management and use of the area. Revise and update this plan for new development as needed.

Obtain rights-of-way as scheduled.

Require permits to minimize the visual impacts of the facilities. Consider compatibility of uses when evaluating applications for special-use permits. Prohibit incompatible electronic uses on the site; give preference to existing uses.

VII. SPECIFIC MONITORING AND EVALUATION

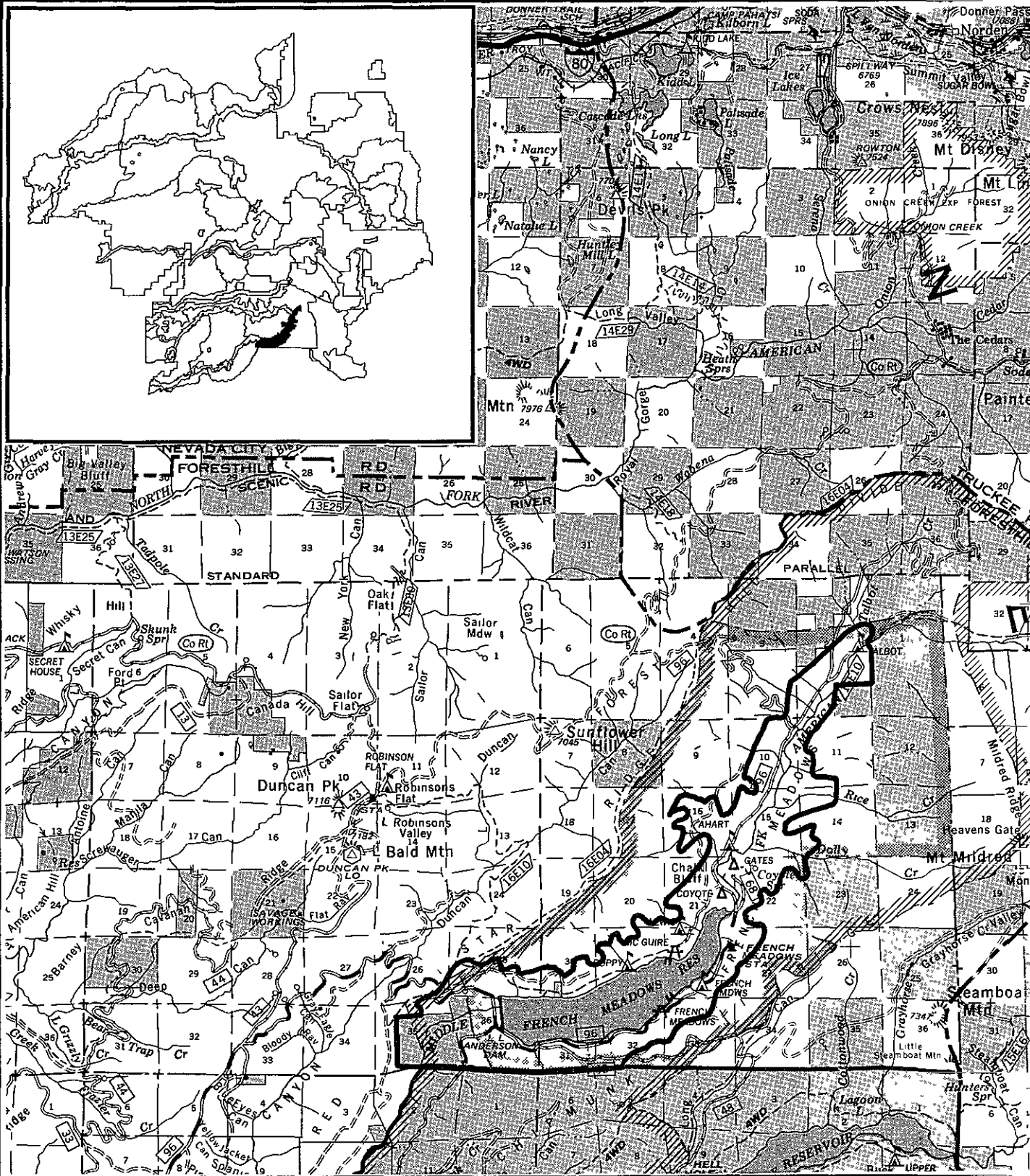
All new applications will be evaluated for compatibility by the Federal Communications Commission and Forest Service. Applications for incompatible frequencies will be denied.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 089

FRENCH

T15N, R14E



089 FRENCH

7,443 GROSS ACRES

7,075 NFS ACRES

I. DESCRIPTION

This management area (MA) is in the area known as French Meadows MA lies in Middle Fork American River watershed area between Star and Chipmunk ridges in the west and east but does not include the area between the ridges. The MA abuts the Eldorado National Forest in the south and extends northerly up the river drain to Talbot area

French Meadows Reservoir, a 1,500-acre reservoir that is a part of Placer County Water Agency's (PCWA) Middle Fork American River Project, lies in the MA. The reservoir was completed in 1967, and is licensed by the Federal Energy Regulatory Commission (FERC)

The MA is mostly in the 5,200 to 6,200 foot elevational range. It slopes gently to moderately on either side of the reservoir and is

The area contains mixed conifer, red fir, and Douglas fir timber types. Wet meadows usually associated with alder swamps are common, particularly in the river basin north of the reservoir. Wetlands comprise 554 acres in the MA. There are 1,771 acres of riparian forest land. A small flood plain area occurs between Talbot Creek and the reservoir

The area has been an important summer range for many years. The present Chipmunk Allotment permittee owns the MA and maintains a cow camp in the MA on private

About 100 acres of riparian forest use occurs in the area. Recreation facilities were developed by PCWA along the shoreline with State Davis-Grunsky Act funding and are operated and maintained by the Forest Service. There are 3 picnic areas, 7 group units, 2 picnic areas, 2 boat ramps, and a beach area. A Forest Service administrative site was developed as part of the project. The Talbot Campground is located near the mouth of the MA which provides access to the Granite Chief Wilderness. Dispersed recreation is less pronounced since most recreation use is water oriented. Most recreation use, including some OHV, is attributable to users from developed sites. The West States Trail passes through the MA

The French Meadows phone Company maintains a combination dial and direct telephone line that crosses the MA to the French Meadows administrative site

The MA lies entirely within the French Meadows State Game Refuge. It is over fifty miles and is accessed

A portion of spotted owl habitat is within this MA

The MA contains a deer population corridor and riparian area. It contains a deer population corridor and riparian area. It contains a deer population corridor and riparian area. It contains a deer population corridor and riparian area.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Maintaining water quality is a concern for the following reasons.

- A Resource management activities have potential to degrade water quality in drainages where water developments serving the French Meadows recreation facilities and the administrative site are located. The drainages include Dolly Creek and two unnamed drainages, one in Section 27, and the other in Section 32 of T 15N, R 14E
- B Reservoir recreation use has potential for affecting water quality.
- C The Middle Fork American River is important as a self-sustaining fishery and spawning area for lake fish

OHV use significantly affects the quality of the recreation experience and can also have an impact on deer. An opportunity exists to improve the range forage production through timber harvesting practices. There is an opportunity to improve deer habitat

The Western States Trail (WST) has received extensive public support for classification within the National Trail System. The WST will be considered a National Recreation Trail when rights-of-way have been acquired.

Dispersed camping poses concerns for health and safety, quality of recreation experience, and user comfort.

111. RESOURCE MANAGEMENT EMPHASIS

Emphasize water-oriented developed recreation at existing and potential recreation sites. Dispersed recreation along the Middle Fork American River and the French Meadows Reservoir will also be emphasized. Manage the remaining area for grazing and timber production on a regulated basis.

Provide public-sector facilities appropriate to the Recreation Opportunity Spectrum classification to accommodate average weekend demand levels. Offer a range of opportunities for developed site and dispersed area activities, with developed site opportunities favored when necessary. Special cutting management of timber resources will be considered for suitable stands.

A management plan for the Western States National Recreation Trail will be developed during Plan Implementation. In the interim, management activities are designed in a manner that will not preclude designation. Although the Trail does not qualify for National Historic or Scenic status, the trail does have historic and scenic values to some users, and strong consideration should be given to maintaining the integrity of these qualities in management decisions.

IV. MANAGEMENT AREAS STANDARDS AND GUIDELINES 1/

A. Recreation Opportunity Spectrum - Rural for developed sites. Rodeo natural for all other areas.

B. Visual Quality Objective - Retention. Foreground retention is established from the following viewpoints.

1. Western States Trail
2. Middle Fork American River
3. Forest Highway 96 to junction of 51 Road, 51 Road to Talbot Campground
4. Campgrounds viewing out

Partial retention within the developed sites and also meet the partial retention VQO when viewed as middleground from travel routes and other occupancy sites.

C. Transportation Management Policy - Management of the Western States Trail will reflect management of the area it passes through.

D. Mf-Highway Vehicle Restrictions. Designated routes only summer. Open to over-the-snow vehicles.

E. Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- A17 Visual Resource Improvement

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C3 Lake Fisheries - Nonstructural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management- Permanent Range Type (Extensive Management)
- D5 Range Management- Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E7 Special Cutting
- E8 Uneven-age Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F3 Flow Timing Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Access Road Development- Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike
- L6 Trail Construction/Reconstruction - Special Uses
- L7 FBO Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The ROS guidelines reflect the developments and activities that characterize the selected management practice. Regulate dispersed recreation, especially OHV use, to prevent deterioration of the developed recreation experience. Restrict camping to developed sites and designated camping areas to maintain sanitation of watercourses, facilitate management of concentrated recreation use, and minimize impacts to land and resources over the entire management area.

Adherence to BMP's in the SMZ ensures the necessary protection to domestic water sources.

Develop a spotted owl management plan for SOHA U-1

VII. SPECIFIC MONITORING AND EVALUATION

Monitor water quality in accordance with present requirements

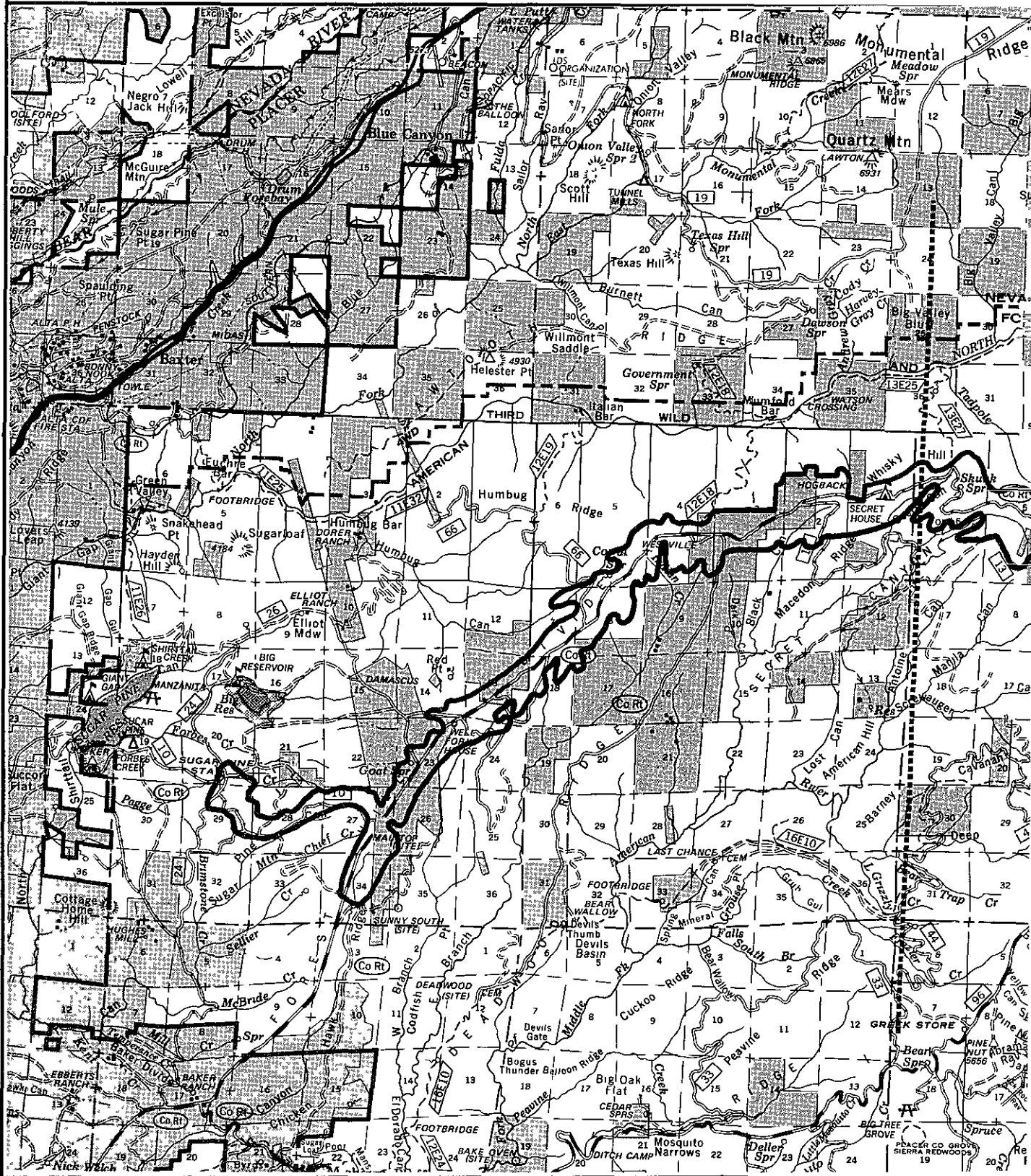
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 090

DIVIDE

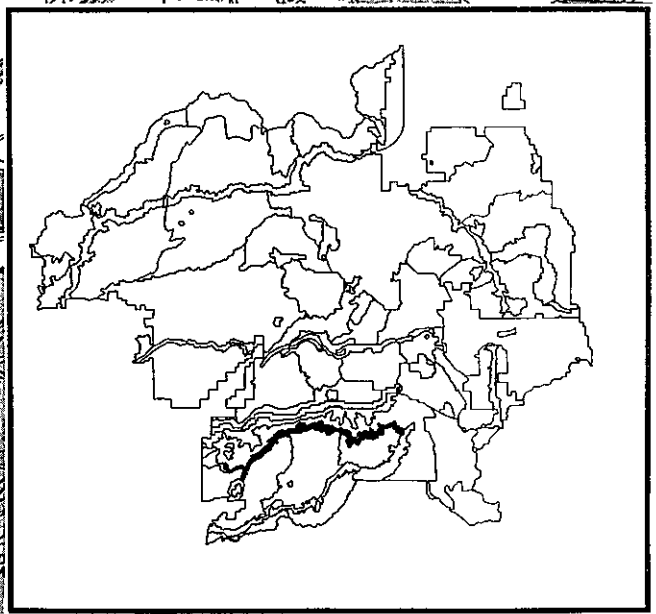
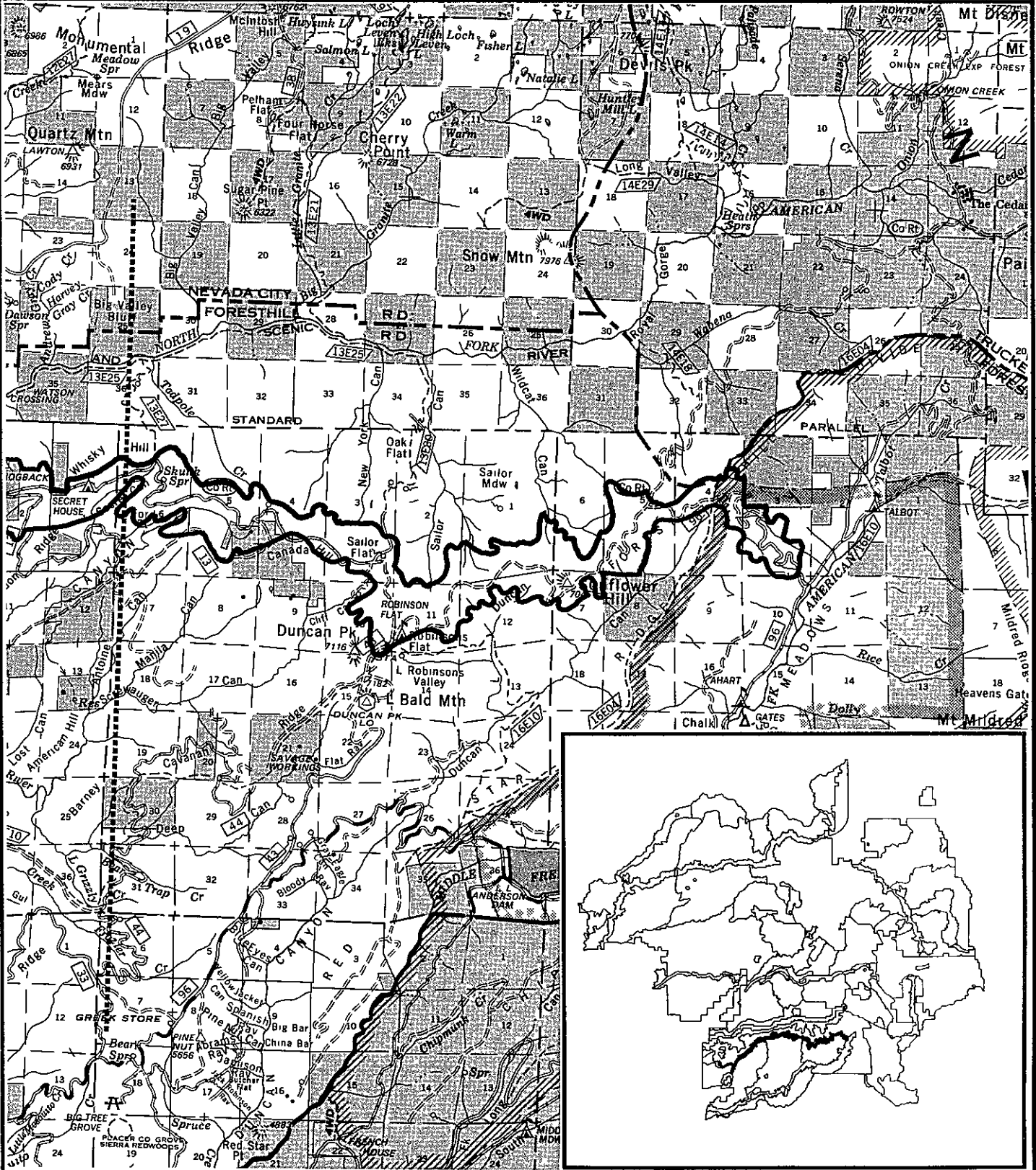
T15N, R13E



MANAGEMENT AREA 090

DIVIDE

T15N, R13E



090 DIVIDE

9,794 GROSS ACRES

7,358 NFS ACRES

I. DESCRIPTION

This management area (MA) encompasses the Placer County Foresthill Divide Road from the Chicken Hawk area to the junction of the Soda Springs Road. The Foresthill Divide Road is paved and two lanes wide to Robinson Flat. The remaining portion is single lane with a gravel or native surface. This area also includes the Sugar Pine Road from the Foresthill Divide Road to the old Sugar Pine Guard Station. This road is the principal access to the Sugar Pine Reservoir recreation area.

The elevation range of this MA is 4,300 feet to 7,200 feet. Topography and slopes are gentle up to about 5,400 feet. Above this elevation steeper, more dissected terrain exists. Past use has included mining, timber production, and grazing.

Vegetation in the lower section is characterized by even-aged 50-year-old pine plantations planted after the Volcano Fire. The upper section contains mixed conifer and red fir forestland. There are 186 acres of wetlands. There are 90 acres of unsuitable productive forest land.

Secret House and Robinson Flat recreation sites are in the MA. This unit extends through four grazing allotments, including the Sugar Pine, Volcano, and Deadwood Allotments.

This MA is characterized by many far-view vistas into much of the surrounding country. Significant private lands, mostly barren or in young plantations, exist in the western half of this MA. Several of these private parcels are now being subdivided.

Several trailheads leading into the North Fork of the American Wild River exist in this MA, i.e., Mumford Bar, Beacroft, and Sailor Bar.

A portion of spotted owl habitat area T-1 lies within this MA.

Selected emphasis species are the riparian and meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Visual quality is a concern for the area. For the western half, in the vicinity of the Volcano plantations, the view consists of uniform plantations, or modified vegetation on private lands. As one approaches the rim of the North Fork of the American River Canyon above 5,400 feet, the view becomes less modified and the relief more spectacular.

The concern is to eventually provide a varied visual experience near the plantations and private lands. Above 5,400 feet, the concern is to maintain or improve the existing natural visual quality.

Dispersed camping along the Foresthill Divide Road, from Section 4, T 15N, R 14E, down to the Middle Fork American River, has caused resource damage, resulting in restricting camping to developed sites and designated camping areas only in this area.

The Western States Trail and Tevis Cup Loop have received extensive public support for classification within the National Trails System. Both trails will be designated National Recreation Trails when rights-of-way have been secured.

III. RESOURCE MANAGEMENT EMPHASIS

The management emphasis along the Foresthill Divide Road is to monitor and enhance the foreground visual quality. Because of the large acreage of plantation below 5,500 feet, long-rotation, regulated, even-aged management will be used to develop timber stand variety. The desired future vegetative state is a mosaic of even-aged timber stands meeting visual quality objectives. For the immediate foreground corridor, the desired future state is continuous forest cover and/or a mosaic of small even-aged groups meeting visual quality objectives. The foregrounds of Sugar Pine Road #10 and Foresthill Divide Road to the Sugar Pine Road #10 intersection, when approaching from the south, will be managed through regulated, special cutting practices.

Specific project plans are being developed for the Volcano Fire plantation as outlined in the Fire Protection - Continuous Fuels description - P1 - of the Tahoe National Forest Management Practices. This area consists of 8600 acres of continuous plantations with high levels and various types of public use. This creates a need for ongoing fuels management through construction and maintenance of fuel breaks.

Management plans for the Western States and Tevis Cup National Recreation Trails will be developed during Plan implementation. In the interim, management activities are designed in a manner that will not preclude designation. Although neither trail qualifies for National Historic or Scenic status, the trails do have historic and scenic values to some users, and strong consideration should be given to maintaining the integrity of these qualities in management decisions.

IV. MANAGEMENT AREA GUIDELINES AND STANDARDS 1/

- A Recreation Opportunity Spectrum - Rooded natural
- B Visual Quality Objectives - Retention for foregrounds of the Sugar Pine Road #10 and the Foresthill Divide Road to the Sugar Pine Road #10 intersection when approaching from the south. Partial retention for the remainder of the area
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Off-Highway Vehicle Restrictions - Designated routes only in summer. Open to over-the-snow vehicles.
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-County Skiing
- A4 Open ~~OHV~~
- AS Restricted ~~OHV~~
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- 07 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven-Age Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F3 Flow Timing Improvement

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasable
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleable

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Access Road Development- Road **Construction/Reconstruction**
- L2** Multiresource Road Access Development • Road **Construction/Reconstruction**
- L5** Trail **Construction/Reconstruction** • Foot, Equestrian, and Trailbike
- L6 Trail **Construction/Reconstruction** • Special **Uses**
- L7 **FA&O Construction/Reconstruction**
- L8** Transportation Management, Roads- **Obliterated**
- L9** Transportation Management Roads- **Regulated Use**
- L10** Transportation Management, Roads- **Closed**
- L11** Transportation Management, Roads- **Obliterated**
- L12** Transportation Management; Trails • **Open**
- L13** Transportation Management; Trails • **Use**

- P1** Fire Protection • **Continuous Fuels**
- P5** Fire Protection **Visual, High Use, Reservoirs Improvement**

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Retain visual quality by maintaining a near natural appearance. Use timber and other vegetative management practices

Continue to restrict camping along the Foresthill Divide Road, from Section 4, T 15N., R 14E to the Middle Fork American River, to developed sites and designated camping areas only, as needed

Develop a spotted owl management plan for SOHAT-1.

VII. SPECIFIC MONITORING AND EVALUATION

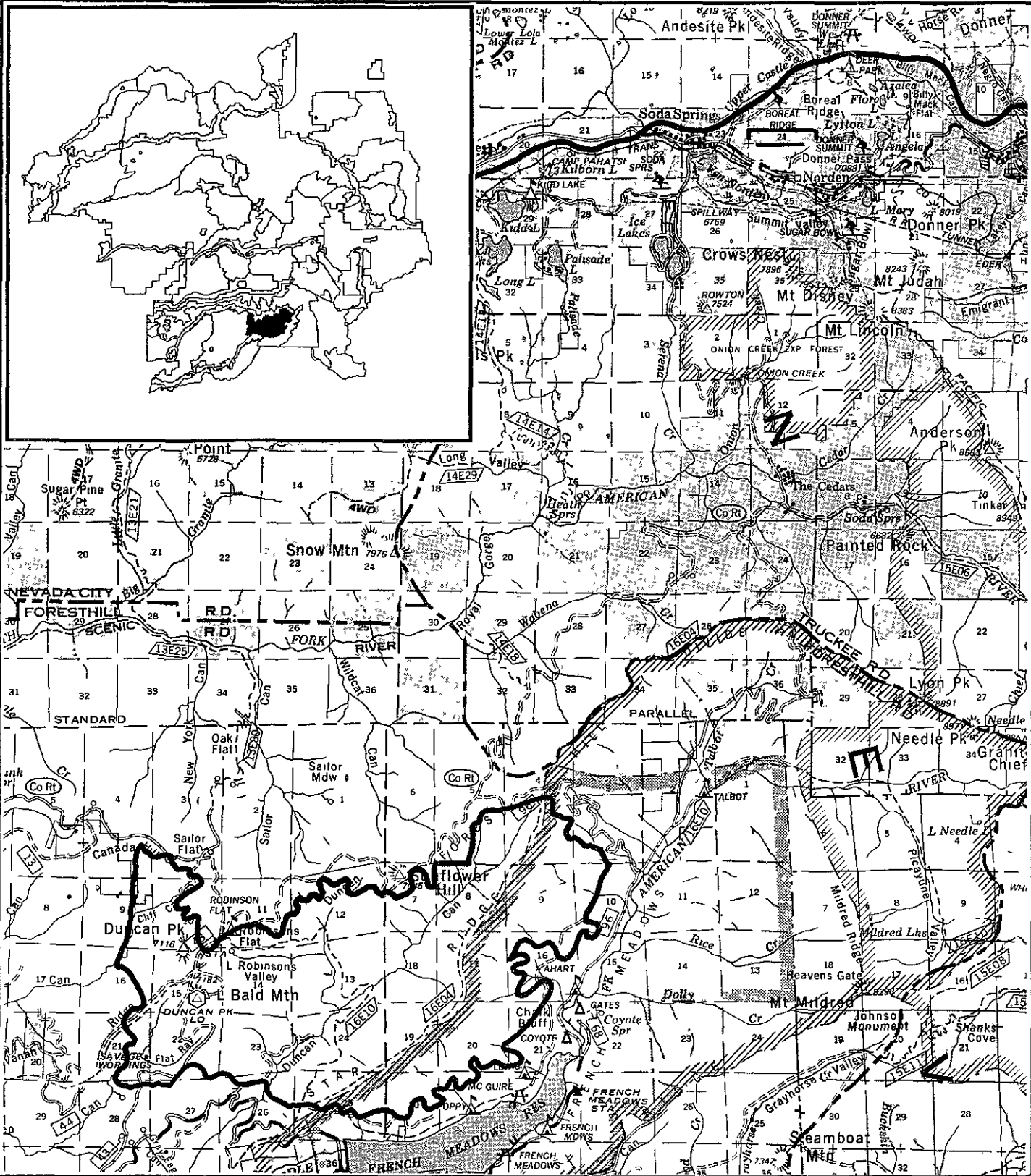
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 091

SUNFLOWER

T15N, R13E



091 SUNFLOWER

11,493 GROSS ACRES

11,254 NFS ACRES

I. DESCRIPTION

This management area (MA) is encompassed by Sunflower Hill on the north, MA 089 on the south and east, and Duncan Peak on the west. The area includes the following physical and administrative features: Upper Duncan Creek, Duncan Peak, Little Robinson Valley, Red Star Ridge, Duncan Peak Lookout, Duncan Diversion Dam, Western States Trail, Tevis Cup Trail, and a portion of the French Meadows State Game Refuge. Elevations range between 5,200 feet at Duncan Creek to 7,200 feet at Little Bald Mountain. Generally, the area is characterized by moderately to highly dissected uplands within the Duncan Creek and Middle Fork American River drainages. Predominant aspects are northwest and southeast.

The vegetation consists of mixed conifer timber stands at the lower elevations in the Duncan Creek drainage and red fir stands at the higher elevations. There are 476 acres of wetlands. There are 31 acres of unsuitable productive forest land. Portions of the Duncan-Sailor and Chipmunk Range Allotments are within this MA.

About one-half of the management area is accessed, specifically the ridgetops along the eastern and southern fringes. Past timber harvest has been confined to tractor logging of 0 percent to 30 percent slopes. ■

The Sunflower area has a history of frequent lightning fires. Approximately 25 percent of recorded lightning fires on the District have occurred within this area. These fires, which average approximately one-quarter acre in size, normally occur on Red Star Ridge and Bald Mountain.

This area contains important deer migration routes and fawning areas. Selected emphasis species are deer, spotted owl, pileated woodpecker, goshawk, and rainbow and brown trout and the riparian and meadow groups. A portion of SOHA V-1 is within this MA.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

One issue involves the question of future management of Little Robinson Valley and upper Duncan Creek. At present, these areas are unaccessed by roads. Interest groups have expressed a desire to retain the area as unroaded.

The primary management concern is a need to develop a transportation system, a portion of which will cross areas of suspected geologic contacts north of Duncan Creek in Section 13, T.15N, R.13E and Section 18, T.15N, R.13E. Water concentrations resulting from road construction in this area could cause excessive surface erosion.

The area from Red Star Ridge to MA 089 has been closed to dispersed camping since the development of the French Meadows Recreation area. There are no health, safety or resource protection concerns which currently necessitate prohibition of dispersed camping in this area.

Another concern is the effect of management practices and increased public access on deer migration routes and fawning areas.

There is an opportunity to improve habitat for deer.

There is an opportunity to use the transitory range created by timber harvesting.

The Western States Trail and Tevis Cup Loop have received extensive public support for classification within the National Trail System. Both trails will be designated National Recreation trails when rights-of-way have been acquired.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitory range created by timber harvest.

Emphasize wildlife and watershed values when managing in streamside management zones, spotted owl habitat areas, and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing recreation development sites, special-use permit areas, etc.

Emphasize retaining the present vegetative character of Duncan Creek's SMZ. Manage Little Robinson Valley (capability areas 535, 543, 544, 545, 552, 558, and 560) to emphasize scenic qualities.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-size stands of the mixed conifer type. Manage these stands on a short rotation schedule of 50 to 120 years. The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention initial VQO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining high elevation mixed conifer stands will be managed on a short rotation basis. This latter category includes approximately 3,725 acres. The remaining land within the management area will be similar to the present condition.

Management plans for the Western States and Tevis Cup National Recreation Trails will be developed during Plan Implementation. In the interim, management activities are designed in a manner that will not preclude designation. Although neither trail qualifies for National Historic or Scenic status, the trails do have historic and scenic values to some users, and strong consideration should be given to maintaining the integrity of these qualities in management decisions.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive nonmotorized in Duncan Creek SMZ and Little Robinson Valley. Routed natural in other areas
- B. Visual Quality Objective - Retention in foreground as viewed from the Western States Trail between Robinson Flat and the junction with Duncan Creek. This includes the portion of the trail through Little Robinson Valley and Little Duncan Canyon. Partial retention in immediate foreground of the Western States Trail from the junction with Duncan Creek to the boundary with MA 089. The VQO of partial retention is established for the foreground as viewed from the Tevis Cup Trail. Retention in semi-primitive nonmotorized area south of Little Robinson Valley and in the Duncan Creek SMZ upstream from the Western States Trail. Modification in all other areas
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D. Of-Highway Vehicle Restrictions - Designated routes only, summer. Open winter to over-the-snow vehicles
- E Forestwide Standards and Guidelines. All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)
- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning
- F3 Flow Timing Improvement

~~G1~~ Minerals Management • Locatables
~~G3~~ Minerals Management • Leasables
~~G5~~ Minerals Management • Saleables

~~J1~~ Land Adjustments - Retain and Acquire

~~L1~~ Timber ~~Access~~ Road Development • Road ~~Construction/Reconstruction~~
~~L5~~ Trail ~~Construction/Reconstruction~~ - Foot, Equestrian, and Trailbike
~~L8~~ Transportation Management, Roads • Open
~~L9~~ Transportation Management, Roads • Regulated Use
~~L10~~ Transportation Management, Roads • Closed
~~L12~~ Transportation Management, Trails • Open

~~P1~~ Fire ~~Protection~~ - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Unscheduled timber harvest may be permitted within the Duncan Creek SMZ and within Little Robinson Valley. During road development, use appropriate engineering practices to ensure proper drainage of surface and sub-surface water concentrations (geologic contact areas).

Little Robinson Valley will remain unaccessed.

Continue to use transitory range for livestock.

Discontinue dispersed camping prohibitions in this MA.

Improve fawning habitat where possible and retain cover in migration corridors.

Develop a spotted owl management plan for SOHA V-I.

Develop a management plan for the Western States and Tevis Cup Trails.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor effects of timber harvest on Duncan Creek water quality.

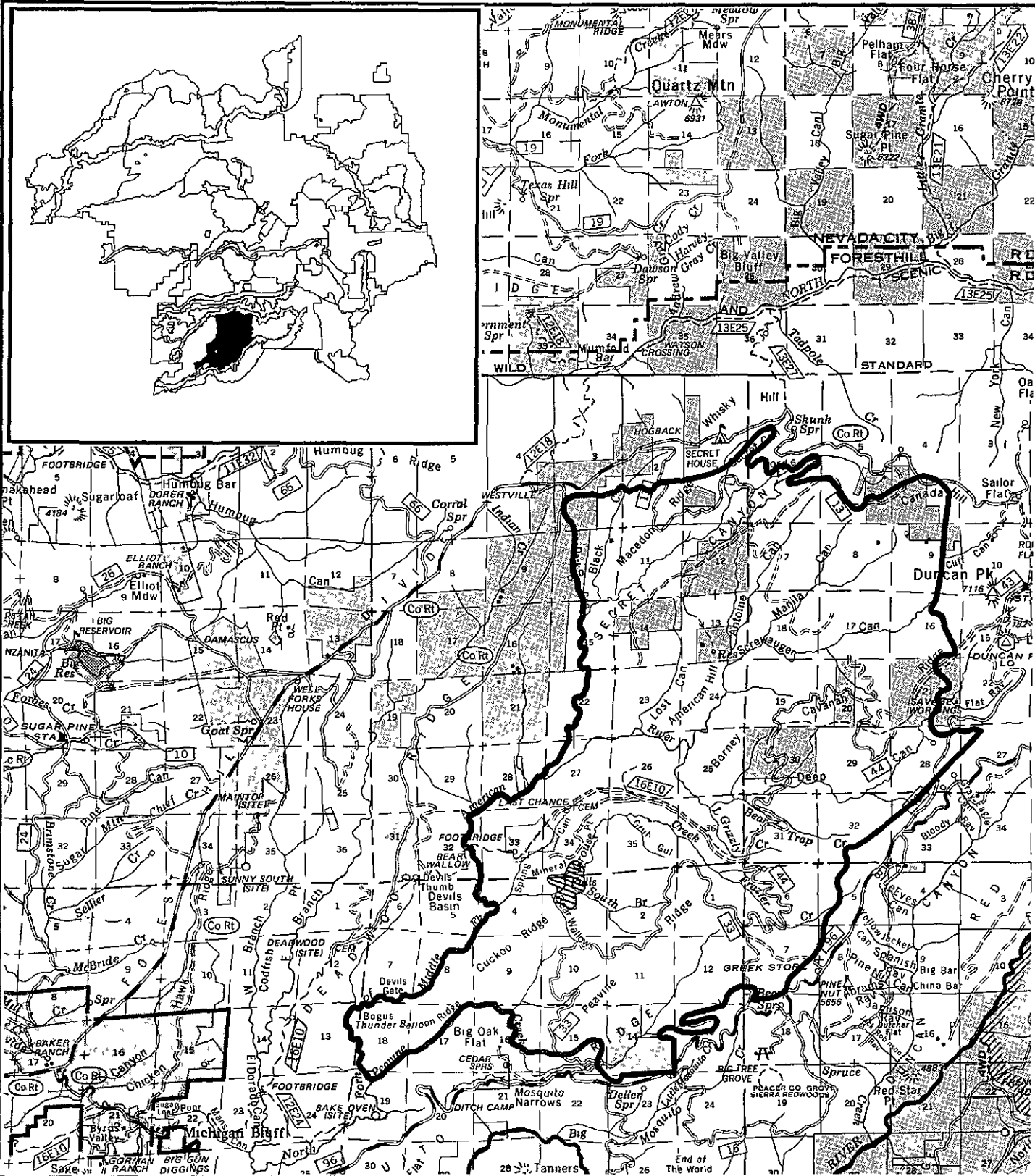
Monitor the quality of deer habitat.

1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 092

PEAVINE

T15N, R13E



092 PEAVINE

35,270 GROSS ACRES

31,752 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 9 miles northeast of Foresthill in the North Fork of the Middle Fork of the American River watershed. The MA is flanked to the west by the North Fork of the Middle Fork, to the north by Macedon Ridge, and to the east and south by Mosquito Ridge. The area includes the following physical and administrative features. Last Chance Townsite, the Western States Trail (19 miles), and Peavine, Cavanah, American Hill, and Cuckoo ridges.

Elevations range between 1,800 feet near the confluence of the North Fork of the Middle Fork American River and Peavine Creek to 6,700 feet near Canada Hill. Topography is moderately to deeply dissected with slopes ranging from flat to 80 percent.

Timber harvesting began in the late 1940's with the construction of the Mosquito Ridge Road (Forest Highway 96). This area is in its second cycle of timber harvest. Vegetation consists primarily of mixed conifer stands and hardwoods on the better soils, and brushfields in the lower elevation canyonlands. There are 308 acres of wetlands. There are 20 acres of unsuitable productive forest land.

Over 50 percent of this MA is accessed, with many of the deep canyons remaining unroaded. The Forest Service has entered into cooperative road agreements for system roads in the Deep Canyon and American Hill areas. The MA contains portions of the Mosquito Ridge and Duncan-Sailor Range Allotments.

Portions of spotted owl habitat areas 5.2 and W-1 lie within this MA.

The selected emphasis species are deer and rainbow and brown trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Grouse Falls, within MA 104, is accessed through this MA. There is an opportunity to improve access to the falls.

Mining activities pose some risk for fire starts, especially in inaccessible canyons.

Opportunities exist for fuelwood cutting, transitory forage production, dispersed recreation (hunting and fishing), and deer migration route enhancement. There is also an opportunity to relocate a portion of the Western States Trail from its present route to a more desirable route following the existing Grizzly Trail.

The Western States Trail (WST) has received extensive public support for classification within the National Trail System. The WST will be designated as a National Recreation Trail when rights-of-way are acquired.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitory range created by timber harvest.

Emphasize wildlife and watershed values when managing streamside management zones and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuitable for timber production, such as existing recreation development sites, special-use permit areas, etc.

The desired future condition for lands intensively managed for timber production consists of plantation through small sawlog-size stands of the mixed conifer type. Manage these stands on a short rotation schedule of 50 to 120 years. The land within the unroaded and steeply dissected North Fork of the Middle Fork American River Canyon will not be managed for timber production and will remain similar to its present condition. The remaining land within the management area will be similar to the present condition.

A management plan for the Western States National Recreation Trail will be developed during Plan implementation. In the interim, management activities are designed in a manner that will not preclude designation. Although this trail does not qualify for National Historic or Scenic status, the trail does have historic and scenic values to some users, and strong consideration should be given to maintaining the integrity of these qualities in management decisions.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum • Roaded natural for those areas intensively managed for timber production and semi-primitive motorized for the steep canyon lands
- B Visual Quality Objective - Partial retention for Grouse Falls Trail foreground and the semi-primitive motorized areas. Modification for remainder. Maximum modification will be allowed on a case-by-case basis.
- C Transportation Management Policy • Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions • Designated routes only in summer. Open to over-the-snow vehicles in winter
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- Ai Nordic Cross-Country Skiing
- A4 Open OW
- A5 Restricted OW

- C1 Stream Fisheries - Nonstructural improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- c7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting • Existing Stands
- E5 Commercial Thinning • Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saieabies

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiple Resource Road Access Development - Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction • Foot, Equestrian, and Trailbike
- L6 Trail Construction/Reconstruction • Special Uses
- L7 FBO Construction/Reconstruction
- L8 Transportation Management, Roads • Open
- L9 Transportation Management, Roads • Regulated Use
- L10 Transportation Management, Roads • Closed

- L11 Transportation Management, Roads - Obliterated
 - L12 Transportation Management, Trails - Open
 - L13 Transportation Management, Trails - Restricted Use
- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Manage the area adjacent to the Grouse Falls Trail to maintain a near natural appearance.

Emphasize fire prevention on mining activities

Land within the unroaded North Fork Middle American River canyon will be managed with an emphasis on wildlife and watershed values

Develop management plans for SOHA's 5.2 and W-1.

VII. SPECIAL MONITORING AND EVALUATION

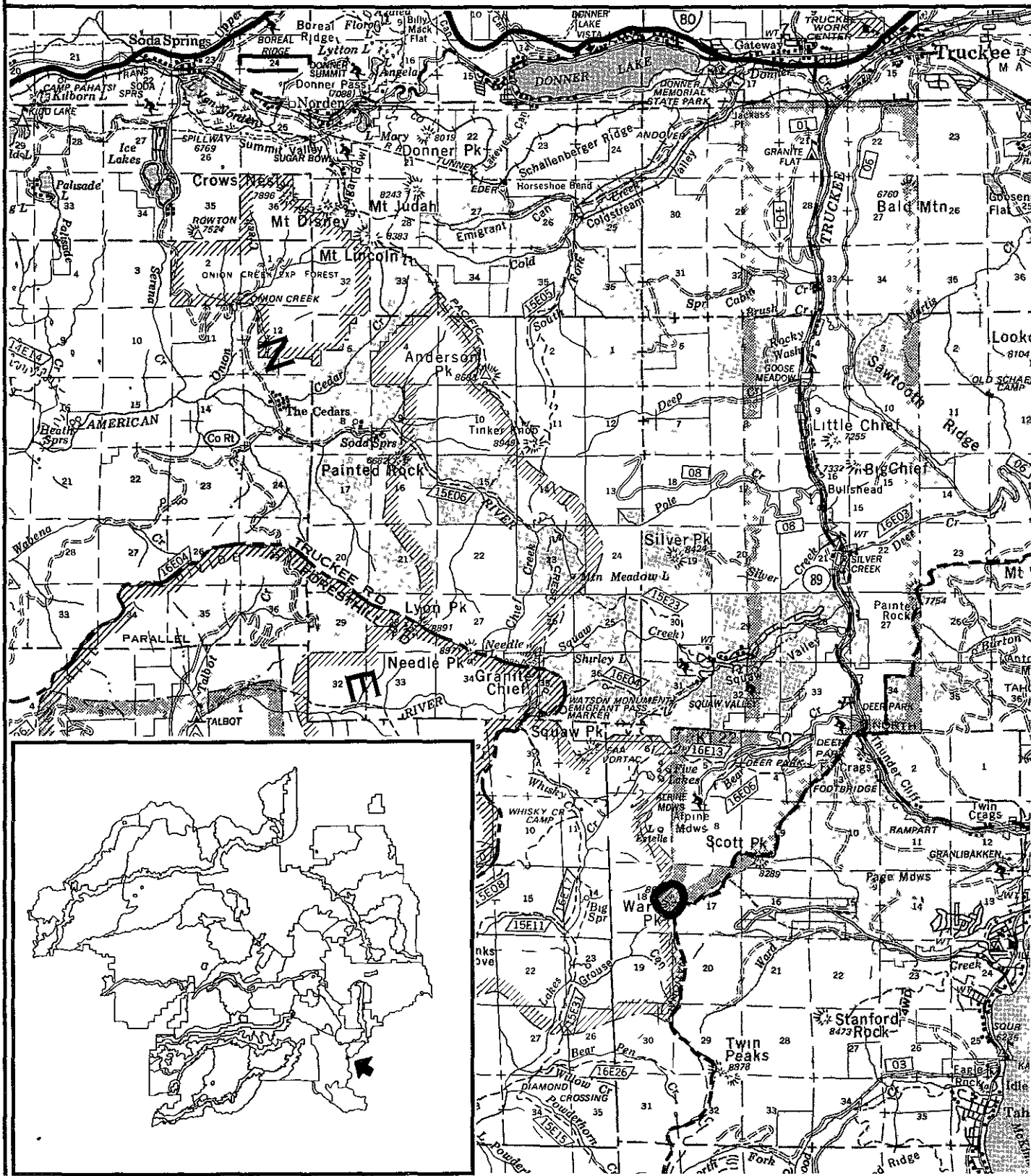
Monitor streamside management zones and activities associated with timber cutting.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 093

WARD

T15N, R16E



093 WARD PEAK

5 GROSS ACRES

5 NET ACRES

I. DESCRIPTION

This management area (MA) is located on a ridge near Ward Peak along the Sierra Crest above Alpine Meadows Ski Area at an elevation of 8,490 feet. The site was first occupied in 1967 for a television relay. At present, there are nine permits using the site for communications and television microwave relay. The site has electrical power provided by underground cable and access is via the Forest System road through the Alpine Meadows Ski Area. The site has two concrete buildings approximately 12 feet square and two steel towers to elevate parabolic microwave antennae. Winter access is provided by a ski lift owned by Alpine Meadows, or by helicopter. There is an existing transportation agreement among users of the site coordinating access to the site.

The site is barren and rocky. Snow accumulation is variable due to winds. Drifts of up to 100 feet have been reported on the leeward side of the electronic site. Southern Pacific Communications Company has microwave facilities on nearby lands owned by Southern Pacific Land Company.

There are no selected emphasis species. There are no wetlands. There are 5 acres of unsuitable productive forest land.

Downhill skiing is allowed by a special-use permit issued to Alpine Meadows Ski Area.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Electronic site permittees are concerned about limitations that may be imposed on future expansion of facilities and winter access.

The Alpine Meadows ski organization is concerned that this electronic site use could conflict with their ski area operations.

There is an opportunity to concentrate compatible electronic uses of National Forest System land at this and other approved electronic sites.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is used as an electronic site. Permits will require that facilities minimize visual impact. Consider compatibility of uses when evaluating applications for special-use permits. Incompatible electronic uses will not be permitted to occupy the site; existing uses will be given preference. The MA is unsuitable for regulated timber management production.

Allow downhill skiing that is not in direct conflict with electronic uses. Resolve indirect or perceived conflicts, including the helicopter landing issue, on a case-by-case basis.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

A Recreation Opportunity Spectrum - Rural.

B Visual Quality Objective - Modification. This VQO allows management activities to dominate the characteristic landscape, however, structures and roads should remain visually subordinate when viewed in background. To meet these requirements in some cases require significant efforts at visual mitigation to satisfy the modification objective. Where proposed installations in this latter category are in a visually prominent location, maximum practical mitigation will still be implemented even if the resultant visual quality will exceed the objective. The modification VQO will be applied as the base level or minimum acceptable visual quality.

C Transportation Management Policy - Forestwide Standards and Guidelines apply.

D Off-Highway Vehicle Restrictions - Closed

E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES^{2/}

- A6 Closed OHV
- A10 Downhill Ski
- A12 Downhill Ski Planning, EIS/EA Development

- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables

- J2 Land Adjustments - Limited

- L9 Transportation Management, Roads - Regulated Use

- P3 Fire Protection - Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The electronic site plan provides guidelines and direction for management and use of the area. Revise and update this plan for new development as needed. All new applications will be evaluated by the Forest Service and the Federal Communications Commission for compatibility with existing uses. Incompatible frequencies will be denied.

Use coordination to minimize conflicts in uses between electronic site permittees and Alpine Meadows ski area.

VII. SPECIFIC MONITORING AND EVALUATION

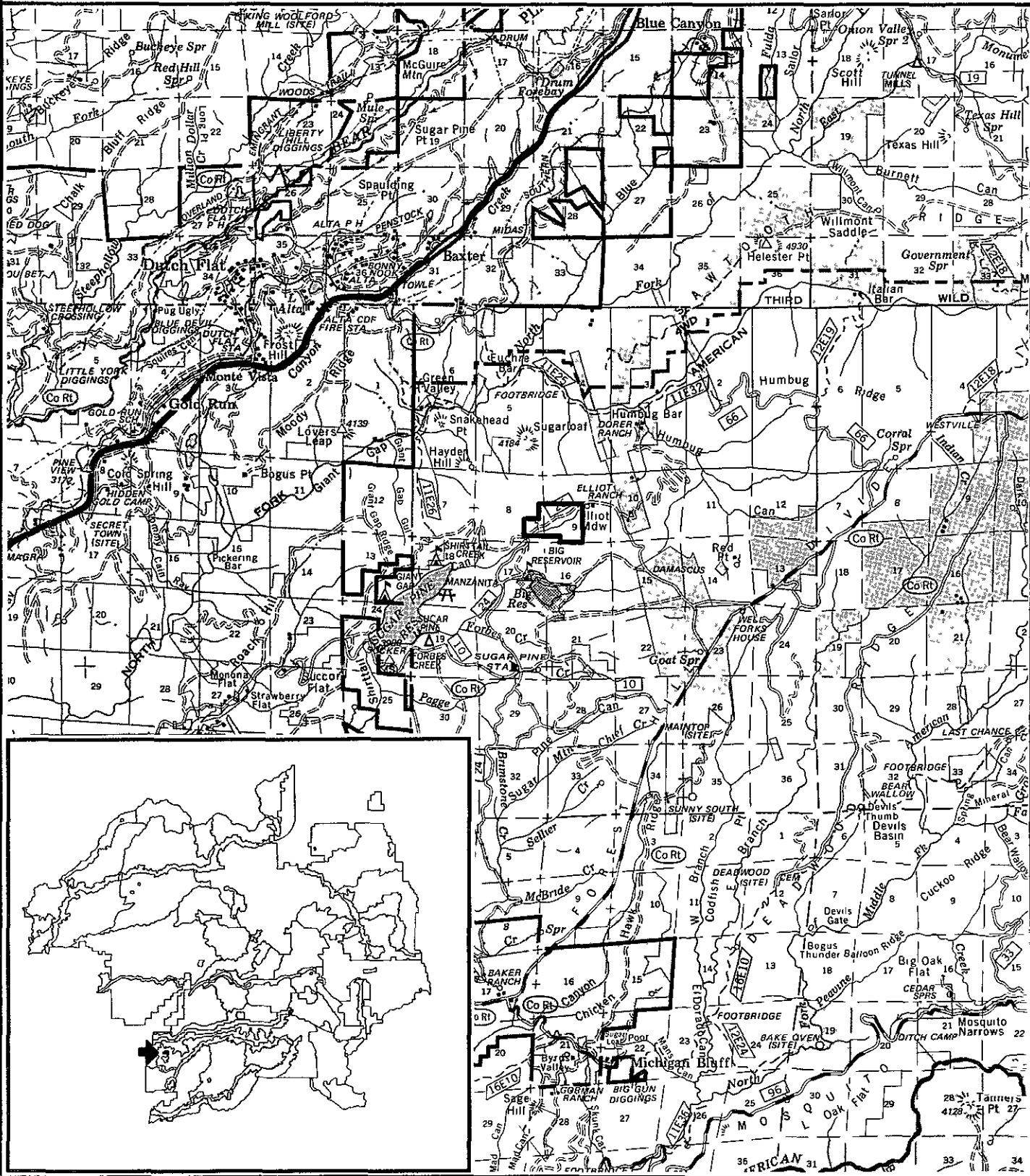
Monitor the effects of snow deposition resulting from the electronic site structures and the effect on the ski area.

- ^{1/} Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- ^{2/} Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 094

ELLIOT

T15N, R11E



094 ELLIOT

175 GROSS ACRES

175 NFS ACRES

I. DESCRIPTION

This management (MA) area is located approximately 10 miles north of Foresthill in the headwaters of Shirttail Canyon. The elevation is approximately 4,100 feet, and aspects are northwest and southeast. Slopes range from flat to 20 percent. The area was burned over in 1949 and planted with ponderosa pine in 1950.

In 1970, the Pacific Southwest Forest and Range Experiment Station (PSW) established a long-range levels-of-growing-stock (LOGS) study in the pine plantation. The area is within the Sugar Pine Range Allotment and adjacent to the permittee's headquarters at Elliot Meadow. Shirttail Creek is a major tributary to the Sugar Pine Reservoir.

A portion of spotted owl habitat area S-1 lies within this MA.

There are no wetlands. There are 175 acres of unsuitable productive forest land. There are no selected emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

This area, which includes current and possible expanded research, has been blanketed by recent mining claims. The major concern is the protection of research projects from natural and human-caused damage. An opportunity exists to expand research into stands not already occupied by the LOGS study. PSW has already proposed one such study dealing with commercial thinning. Research may dictate the level of slash disposal needed.

III. RESOURCE MANAGEMENT EMPHASIS

Continue to emphasize research for the next 50 years.

The area is unsuited for regulated timber management.

Vegetation will continue to be even-aged stands of ponderosa pine manipulated according to research goals.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roded natural
- B Visual Quality Objective - Modification
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Closed summer and winter
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A6 Closed OHV
- D5 Range Management - Transitory Range Type (Extensive Management)
- F1 Water Resource Improvement
- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire
- F4 Soils Resource Improvement
- L1 Timber Access Road Development - Road **Construction/Reconstruction**
- L6 Trail **Construction/Reconstruction** - Special Uses
- L8 Transportation Management, Roads - Open
- L10 Transportation Management, Roads - Closed
- L12 Transportation Management, Trails - Open
- P5 Fire **Protection** - Visual, High Use, **Reservoirs**, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Obtain mineral withdrawal and/or work closely with claimant so that operations are controlled to minimize disturbance to research projects

Dispose of any activity slash to minimize fire hazard, and keep stands in good health to minimize insect and disease losses

Develop a spotted owl management plan for **SOHA S-1**

VII. SPECIFIC MONITORING AND EVALUATION

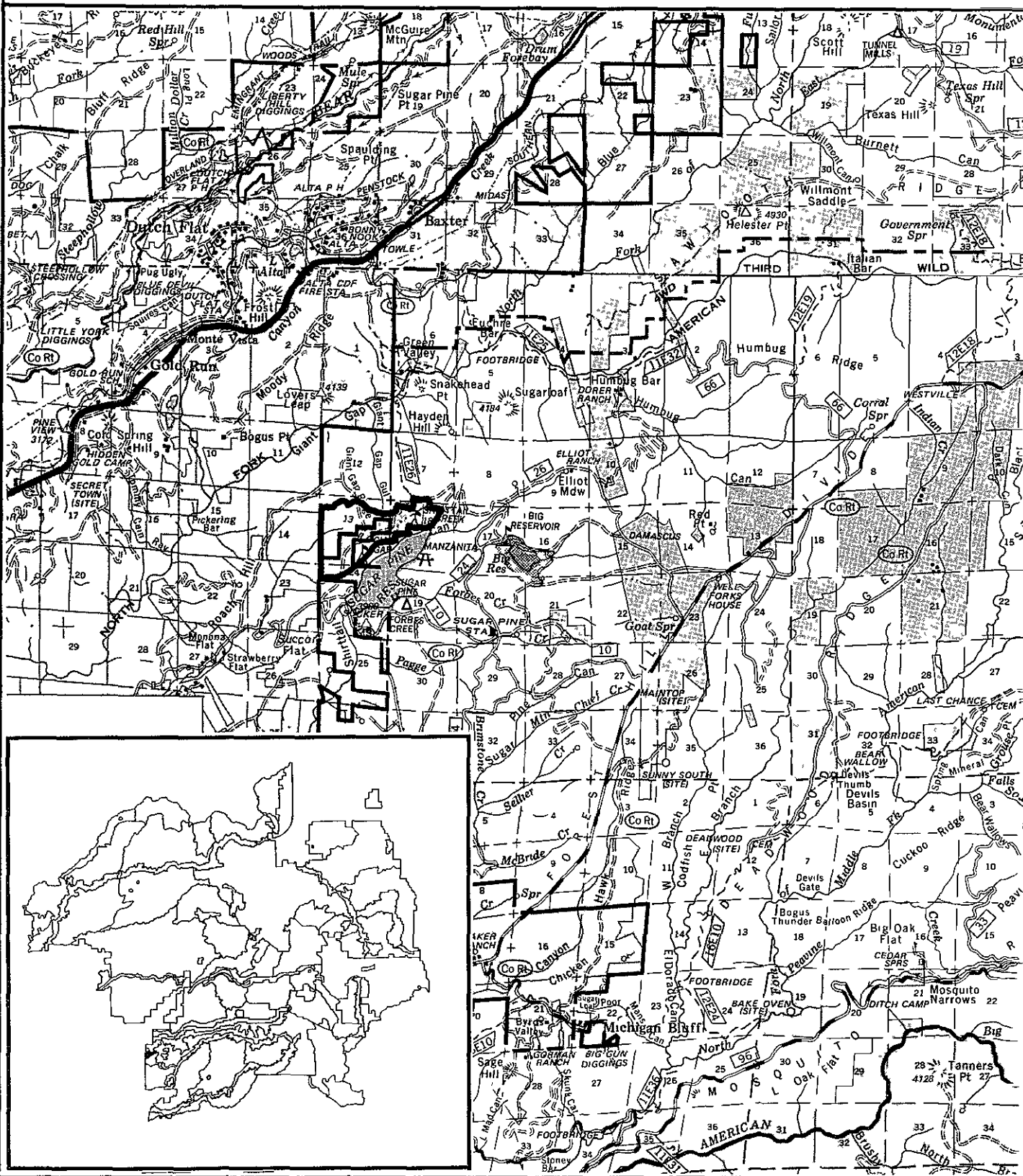
Research data collection and analysis will be done by PSW. Monitoring of mineral exploration and development will be done by the Foresthill District.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 095

MACY

T15N, R11E



095 MACY

667 GROSS ACRES

667 NFS ACRES

I. DESCRIPTION

This management area (MA) is encompassed by the Tahoe National Forest boundary on the west, Giant Gap Ridge and Giant Gap Gulch on the north, and the area north of Sugar Pine Reservoir on the south. The area includes National Forest System land adjacent to 378 acres of land acquired by the Bureau of Reclamation as a part of the Sugar Pine Reservoir project. The general elevation is 4,000 feet.

The area was burned over during the McKenzie Mill Fire in 1936. Presently, 90 percent of the area is accessible. The vegetation consists of young conifer plantations, some large scattered mixed conifers, and mixed brush and black oak. There are no wetlands. There are 95 acres of unsuitable productive forest land.

The northeast portion is within the Sugar Pine Range Allotment.

The Bureau of Reclamation acquired the 378-acre parcel to mitigate the loss of wildlife habitat. The acquired lands were conveyed to the Forest Service. In 1985, to be managed in accordance with a wildlife habitat management plan approved by the Forest Service, the Bureau of Reclamation, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service. The provision for this jointly developed plan is stated in the U.S. Fish and Wildlife Service document of February 28, 1975 Sugar Pine Reservoir, Auburn-Folsom South Unit, Central Valley Project, California. The plan was finalized and adopted in 1988.

The selected emphasis species are deer and the hardwood group. The entire area is key winter deer range for the Blue Canyon deer herd.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The primary concern is wildlife habitat mitigation.

Another concern is disturbance to deer during a critical life cycle period (November through April).

An opportunity exists to manage hardwoods.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to intensively manage wildlife habitat for the indicator species. Regulated timber management will be coordinated to meet wildlife habitat requirements using short rotation age management.

The desired future condition is 40 percent of the area in cover and 60 percent in forage areas of proper size and arrangement for deer. The vegetation condition will consist of a mosaic of brush patches (primarily preferred browse species), hardwood stands (primarily black oak), openings planted with preferred grasses and legume species, and conifer patches. The vegetation will consist of various age classes and be distributed evenly over the area.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

A. Recreation Opportunity Spectrum - Roaded natural

B. Visual Quality Objective - Modification. Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have herein been assigned the modification VQO. All management activities within the Macy MA, as viewed from the Sugar Pine Reservoir, must meet partial retention VQO.

- C Transportation Management Policy - Access will be regulated in order to protect wildlife
- D Off-Highway Vehicle Restrictions - Closed
- E Forestwide Standards and Guidelines - All apply
- F. Specific Standards and Guidelines not stated above - S&G 22 Develop management plan in cooperation with other agencies; develop new guidelines for browse production among conifers

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A6 Closed OHV
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)
- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning
- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- J1 Land Adjustments - Retain and Acquire
- L1 Timber Access Road Development - Road Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Where practicable, close or obliterate roads not necessary for resource management and revegetate with preferred forage species. Establish vegetative roadside screening along usable roads. Restrict management activities during critical wildlife cycles (November 1 - May 1)

Maintain or improve key winter deer range

VII. SPECIFIC MONITORING AND EVALUATION

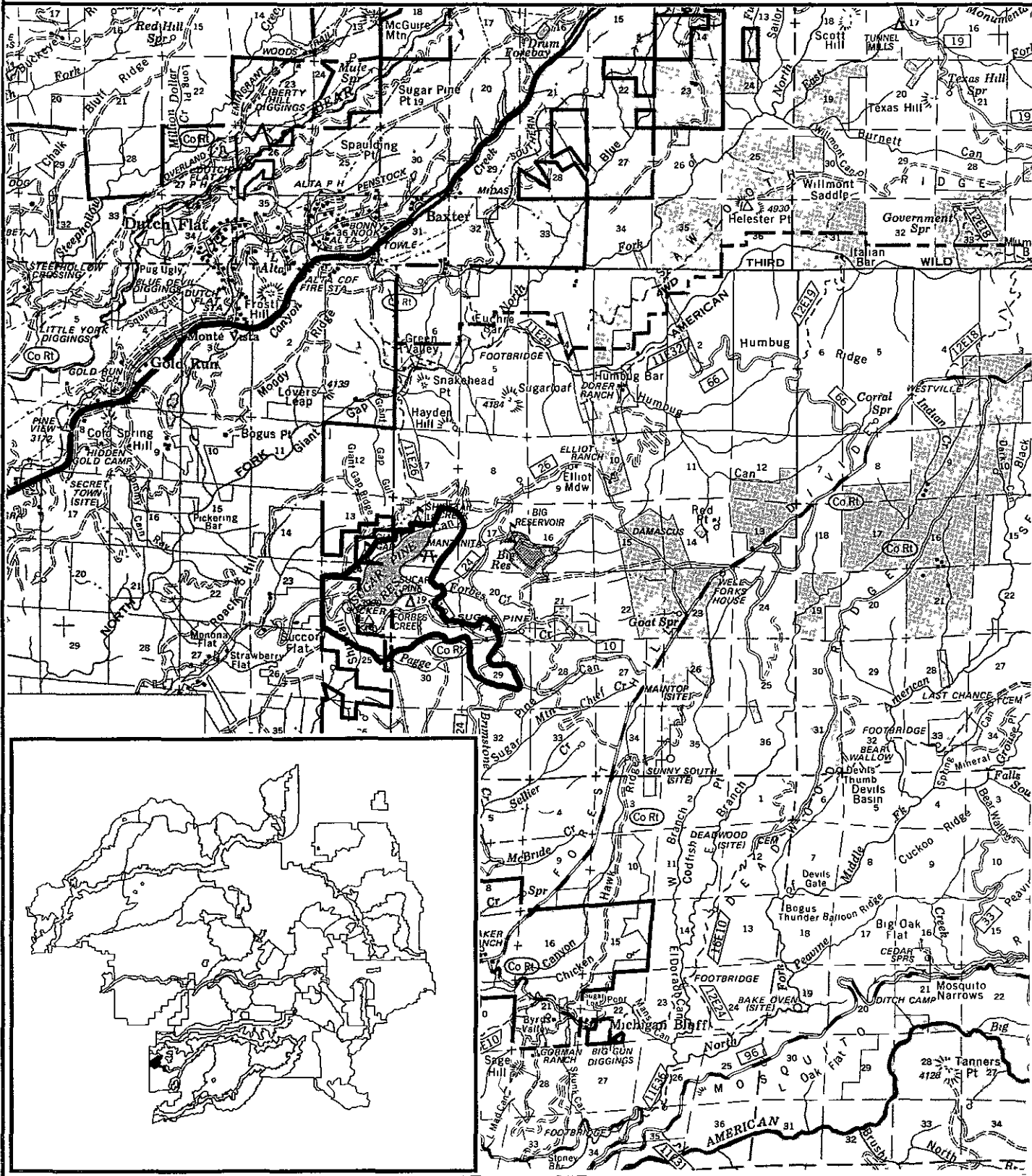
Monitor to determine if guidelines for browsing among conifers meets wildlife goals

1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 096

SUGAR PINE

T15N, R11E



096 SUGAR PINE

1,311 GROSS ACRES

1,311 NET ACRES

I. DESCRIPTION

This management area (MA) is located 8 miles north of Foresthill. It includes Sugar Pine Reservoir and the land which forms the view and use area near the reservoir, as well as the Sugar Pine road foreground corridor extending east to the vicinity of the former Sugar Pine Guard Station site. Sugar Pine road provides principal access to the reservoir.

Sugar Pine Dam on North Shurtail Creek, completed in 1981, is part of the U.S. Bureau of Reclamation's Central Valley Project authorized by Public Law 89-161 in 1965. The reservoir, with a capacity of 7,000 acre-feet and a size of 160 surface acres, is the source of domestic water for the Foresthill Divide. Water is delivered from the reservoir to the Foresthill Public Utility District.

The Foresthill PUD studied the feasibility of developing a hydroelectric plant at the dam and surrendered their FERC permit in 1987. The dam was designed to accommodate the future addition of a 20-foot radial gate that would increase capacity by increasing the depth. A future need for additional water for domestic purposes was the sole reason for this contingency feature, but the future interest in hydroelectric development could become the catalyst for installation of the radial gate.

Recreation facilities have been open to the public since 1985. Two family campgrounds (with a total of 60 units), two 50-person group campgrounds, 25 picnic units, a beach, boat ramp, and 4.2 miles of foot trails, of which 1.2 miles are specifically designed for the handicapped, comprise the developed sites. A sanitary dump station is located immediately outside the reservoir watershed. Land acquired by the U.S. Bureau of Reclamation and recreation facilities constructed under USBR contract have been conveyed to the Forest Service. There is heavy motorcycle use nearby.

Most of the MA has been withdrawn from mineral entry.

Segments of the Finning Mill and Iowa Hill county roads are located in the management area. The area is 100 percent accessed.

The MA lies largely within the Sugar Pine Range Allotment.

Vegetation is a mosaic of irregularly structured mixed conifer, oak-conifer, oak, and oak-brush stands. There are no wetlands. There are 632 acres of unsuitable productive forest land. The visual absorption capability is generally low.

The 1936 McKenzie Mill Fire was the last large fire in the MA.

The McGeachin Ditch crosses the MA at the 3,700-foot elevation west of the reservoir. DeAnza Placer Gold Mining Company has an easement for the ditch.

Selected emphasis species are small mouth bass, deer, bald eagle, osprey, rainbow trout, and the riparian group. The northern tip of this MA is key winter deer range for the Blue Canyon deer herd.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Water quality and watershed conditions are concerns since the reservoir is a domestic water supply. Dispersed camping poses concerns for health and safety, administering recreation use, and resource protection.

Maintaining visual quality and protecting the developed recreation experience from deterioration by motorcycle use are recreation concerns.

There is an opportunity to improve key winter deer range.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize recreation management, including the reservoir basin and the foreground of the Sugar Pine and Iowa Hill roads. Timber management will be regulated through special cutting practices. Uneven-aged (group selection) management should be considered when stand conditions permit.

The desired future vegetational state is a mosaic of continuous cover.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural
- Visual Quality Objective. Retention for the foreground views as seen from Sugar Pine Reservoir, developed campgrounds, campground access roads, and road numbers 41, 40, 10, and 24. Partial retention within the developed sites and meet the partial retention VQO when viewed as middle ground from travel routes and other occupancy sites. Partial retention for the remainder of the area.
- C Transportation Management Policy - Open
- D Off-Highway Vehicle Restrictions - Designated routes only summer, and open in winter
- E Forestwide Standards and Guidelines - All apply,

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2** Stream Fisheries - Structural Improvement and Maintenance
- C3 Lake Fisheries. Nonstructural Improvement and Maintenance
- C4** Lake Fisheries - Structural Improvement and Maintenance
- C6 Mid-succession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8** Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E7 Special Cutting
- E8 Uneven-aged cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management. Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management. Leasable Withdrawals
- G5 Minerals Management - Saleables

- J1 Land Adjustments - Retain and Acquire

- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- L6 Trail Construction/Reconstruction- Special Uses
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection-Visual. High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

The selected visual quality objectives and maintaining a continuous forest cover in the reservoir basin ensures visual quality. Withdrawal of locatable minerals (existing) in most of the area provides a measure of legal protection.

Restrict OHV use to prevent deterioration of the developed recreation experience.

Initiate restriction of camping to developed sites and designated camping areas only. Adhere to design capacities at recreation sites.

Retain or improve key winter deer range. Manage key winter range to provide about a 60/40 forage/cover mix.

VII. SPECIFIC MONITORING AND EVALUATION

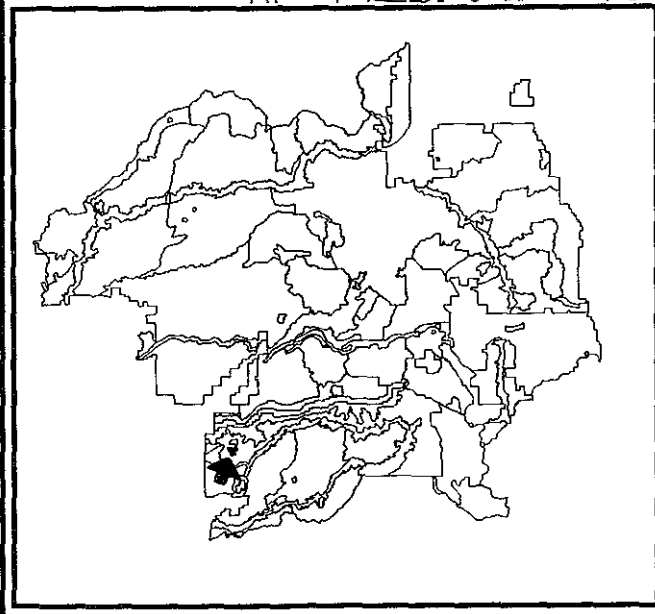
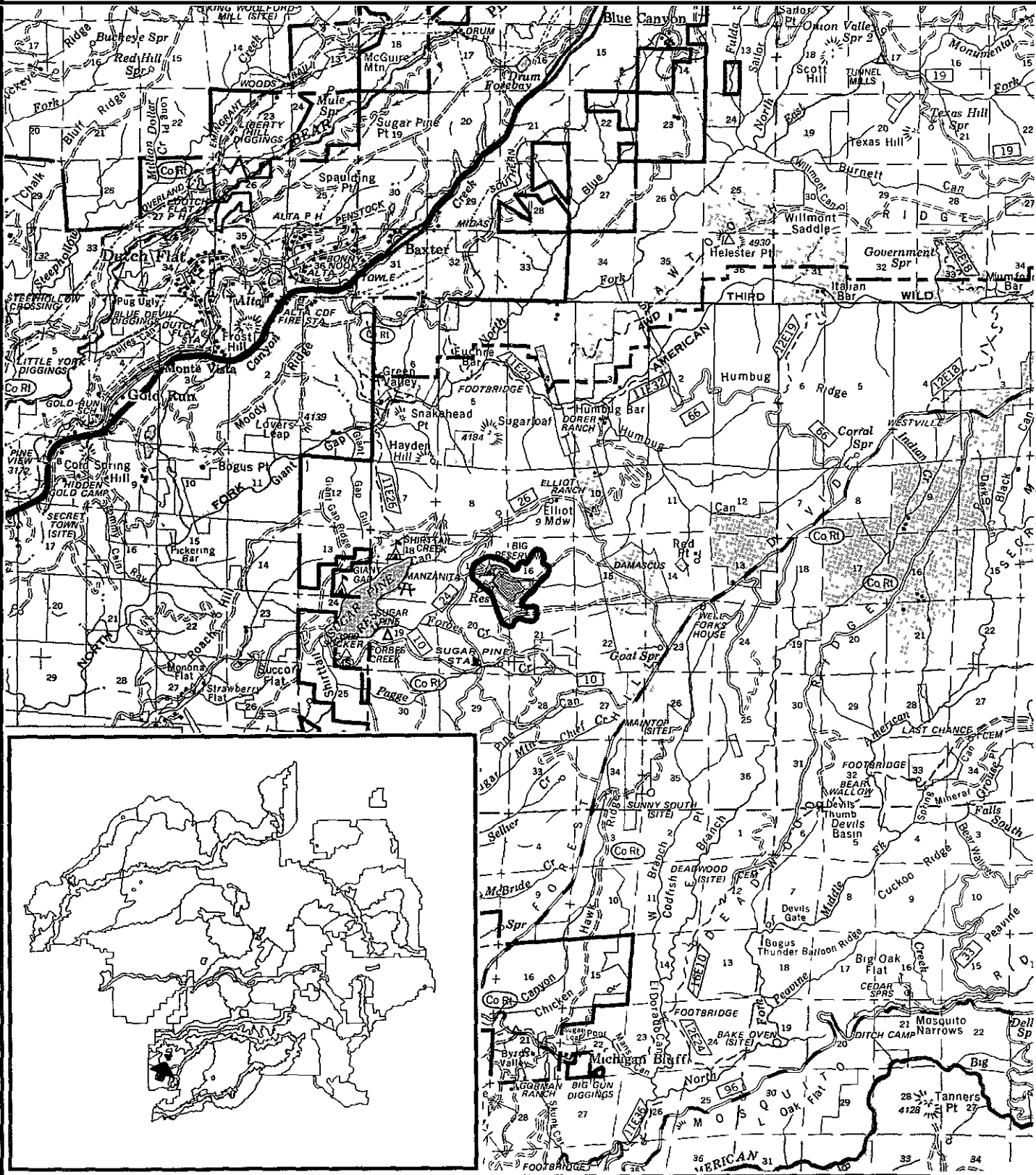
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 097

BIG

T15N, R11E



097 BIG

376 GROSS ACRES

330 NFS ACRES

I. DESCRIPTION

This management area (MA) is located 9 miles northeast of Foresthill at 4,000 feet elevation on the Foresthill Dvide. The management area includes Big Reservoir and a peripheral area. The reservoir, constructed in 1873 and also known as Morningstar Reservoir, was constructed for holding water for mining purposes. The maximum historical pool area has been 72 acres.

Title to the reservoir was disputed for a number of years until the US District Court, by decree of February 5, 1979, granted DeAnza Placer Gold Mining Company a conditional perpetual easement to the reservoir and about 1 acre of adjacent land. DeAnza also operates the 18 unit Big Reservoir Campground under special-use permit as provided for in the judgment.

DeAnza has developed about 100 additional camping units within their easement. The shoreline was altered to accommodate the improvements. The reservoir has been reduced in total surface area, but the campgrounds and reservoir do not occupy any area above the original water level.

Major fires have burned through the area several times in this century, most recently in 1960. Vegetation is largely a ponderosa pine plantation over deerbrush. Scattered large mixed conifers that survived the last two fires may be found in the west extremity of the management area. Giant sequoias were planted around the reservoir following the 1960 Volcano Fire. There are no wetlands. There are 12 acres of unsuitable productive forest land.

The management area is within the Sugar Pine Allotment and is used by cattle and sheep. The management area is 100 percent accessed.

The selected emphasis species is the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is potential for OHV use to adversely affect the quality of the developed site experience.

The present mineral status of all lands within the management area is open for prospecting, location, entry, and purchase under the mining laws. The concern is that the recreation experience and investment in improvements may be jeopardized by the current status.

Dispersed camping in this area would result in concerns for public health and safety, resource protection, and recreation management.

The view from the reservoir is important. DeAnza was given authority to develop additional recreation facilities in the court judgment. Standards that govern the type or design of sanitary facilities were not outlined in the decision. The concern is whether new development will be to accepted standards.

Additionally, a concern relating to reservoir management and recreation management is that the watershed produce high-quality water.

III. RESOURCE MANAGEMENT EMPHASIS

Resource management emphasis is recreation management.

Private recreation developments will be located on the easement area unless it can be demonstrated that further development of National Forest System lands is necessary to meet public needs. It may be necessary to locate certain improvements, such as water tanks or water mainlines, on National Forest System lands.

Maintenance of a continuous forest cover is the desired objective of vegetative management. Timber management will be regulated through the use of special cutting practices.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roded natural
- B Visual Quality Objective - Retention, partial retention within developed sites
- C Transportation Management Policy. Roads open
- D Of-Highway Vehicle Restrictions- Designated routes only in summer. Open to over-the-snow vehicles
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A i Nordic ~~Cross-Country~~ Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A 11 Recreation ~~at~~ IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- D2 Range Management- Permanent Range Type (Extensive Management)
- D5 Range Management- Transitow Range Type (Extensive Management)
- D7 Range Improvement- Nonstructural (Permanent and Transitory)
- D8 Range Improvement- Structural (Permanent and Transitory)

- E7 Special Cutting
- E8 Uneven-Aged Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management- Looatables
- G2 Minerals Management- Locatable Withdrawals
- G3 Minerals Management- Leasables
- G4 Minerals Management* Leasable Withdrawals
- G5 Minerals Management- Saleables

- J2 Land Adjustments - Limited

- L2 Multi-resource Road Access Development- Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction- Foot, Equestrian and Trailbike
- L6 Trail ~~Construction/Reconstruction~~ -Special Uses
- L8 Transportation Management. Roads- Open
- L9 Transportation Management, Roads. Regulated Use
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection - Visual, High Use, Reservoirs Improvement

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Protect developed recreation ~~site~~ values by designating and monitoring OHV routes. Continue to restrict camping to developed sites and designated camping areas only. Emphasize management ~~of~~ the visual quality ~~of~~ the MA.

Protect Forest Service developed sites through mineral withdrawal.

Various Placer County departments, including the Health Department, are involved with planning the private facility. Provide Forest Service input to County agencies to ensure that facilities meet accepted standards.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor requirements of the court order.

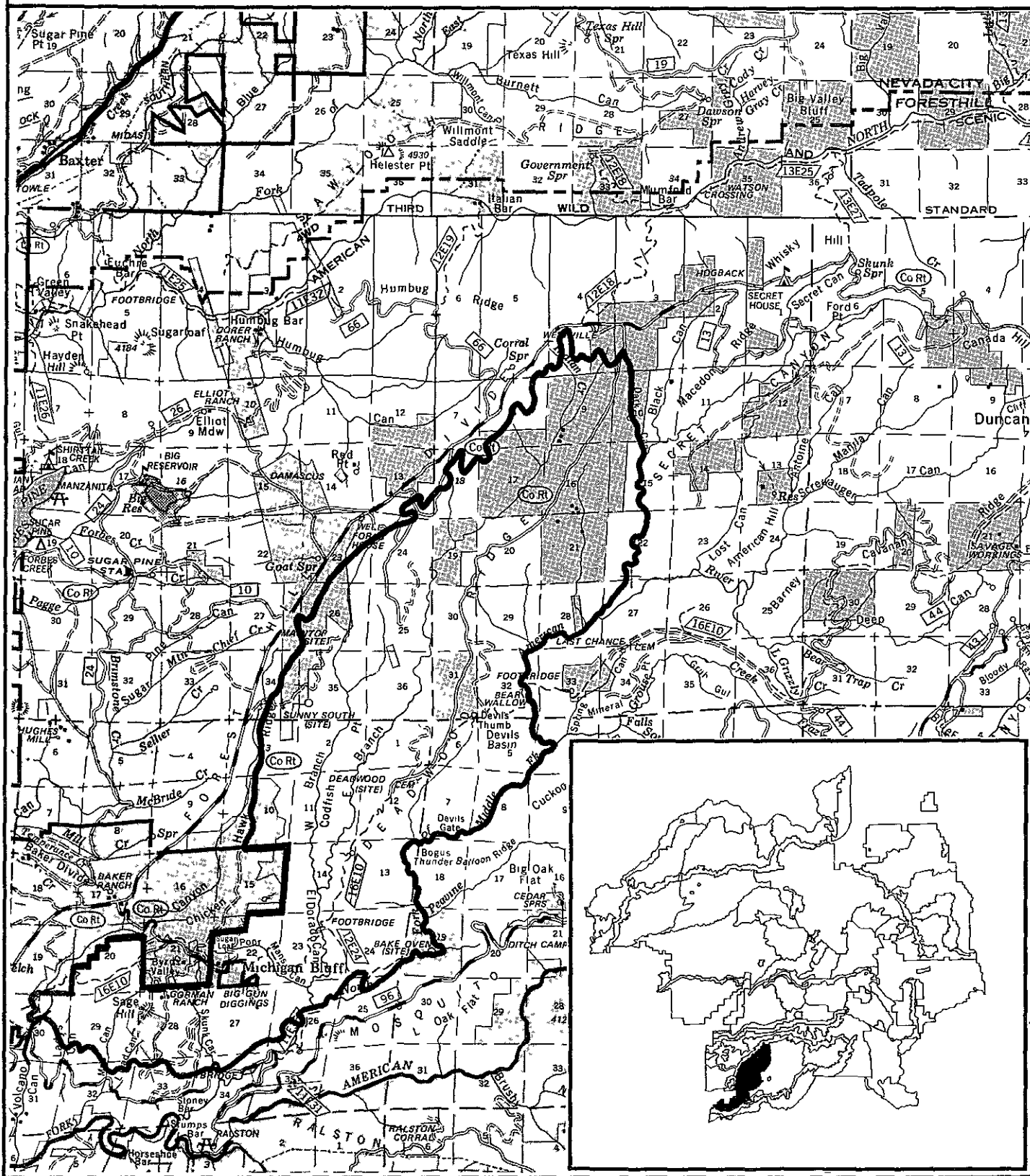
Monitor OHV use

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 098

ELDORADO

T15N, R12E



098 ELDORADO

14,715 GROSS ACRES

9,789 NFS ACRES

I. DESCRIPTION

This management area (MA) is in the Middle Fork of the American River watershed. Elevations range from 1,600 feet near the confluence with Eldorado Canyon and the North Fork of the Middle Fork to 5,200 feet near Westville. Topography is deeply dissected with slopes ranging up to 80 percent. This MA includes portions of the south and southeast-facing slopes of the Forest Hill Divide and all of Deadwood Ridge. The eastern boundary runs up the North Fork of the Middle Fork of the American River, Secret Canyon, and Dark Canyon. The town of Michigan Bluff is bordered on the south by this area. This MA also contains Gorman Ranch, Michigan Bluff, Chicken Hawk Ridge, Codfish Point, Deadwood Townsite, and the Western States Trail. Michigan Bluff has several water sources on National Forest System land in this MA.

This MA has been subject to heavy hydraulic and hard rock mining, with many claims still in existence. Numerous mining operations and patented mining claims continue to add to the risk of human-caused fires and make landline location difficult. A mutual aid fire protection agreement exists with the State for a portion of this area.

In 1960, the Volcano Bum started in the vicinity of the Three Queens Mine and burned about 44,000 acres across the Forest Hill Divide to the North Fork of the American River. Most of the gentler slopes (0-30 percent) have been regenerated. Vegetation consists of pure pine or mixed conifer plantations in the Gorman Ranch and Mitchell Mine areas, and knob cone pine or mixed conifer stands alternating with hardwoods or brush in the canyon lands. There are 71 acres of wetlands. There are 0 acres of unsuitable productive forest land.

Approximately 60 percent of this land is accessed, with most of the canyons remaining unroaded. This area contains portions of the Volcano and Deadwood Range Allotments.

A portion of spotted owl habitat area S-2 lies within this MA.

The selected emphasis species are spotted owl, pileated Woodpeckers, rainbow and brown trout.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The continuous fuelbeds in both the plantations on the ridgetops, and brushfields or timber stands on the slopes, pose a serious problem for controlling fire and protecting investments in reforestation. Adequate prevention in the mutual aid zone is a concern. Mining continues to pose trespass, environmental pollution, and fire hazard risk concerns in this area.

An opportunity exists to use the transitional range created by timber harvesting. There is an opportunity to improve wildlife habitat and develop a fuelbreak system.

The Western States Trail (WST) has received extensive public support for classification within the National Trail System. The WST will be designated a National Recreation Trail when rights-of-way have been acquired.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitional range opportunities created by timber harvest. Emphasize wildlife and watershed values when managing streamside management zones and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as some special-use permit areas, etc.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-size stands in the mixed conifer and hardwood-conifer forest types. Manage these stands on a short rotation schedule of 50 to 120 years. The land within the unroaded and steeply dissected North Fork of the Middle Fork American River canyon will not be managed for timber production and will remain similar to its present condition.

A management plan for the Western States National Recreation Trail will be developed during Plan Implementation. In the interim, management activities are designed in a manner that will not preclude designation. Although this trail does not qualify for National Historic or Scenic status, the Trail does have historic and scenic values to some users, and strong consideration should be given to maintaining the integrity of these qualities in management decisions.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum- Roaded natural for those areas intensively managed for timber production and semi-primitive motorized for the steep canyon lands
- B Visual Quality Objective - Modification Maximum modification will be allowed on a case-by-case basis. Partial retention for the semi-primitive motorized areas
- C Transportation Management Policy - *Forestwide* Standards and Guidelines apply.
- D off-Highway Vehicle Restrictions- Designated routes *only* in summer Open to over-the-snow vehicles
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OW
- A5 Restricted OW
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C2 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries- Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 *Special* Cutting
- E8 Uneven-Age Cutting Method
- E9 *Special Cutting - Urban/Rural/Wildland* Interface
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- F4 Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables

- J2 Lend Adjustments - Limited

- L1 Timber Access Road Development- Road Construction/Reconstruction
- L2 ~~Multiresource~~ Road Access Development- Road Construction/Reconstruction
- L5 Trail Construction/Reconstruction - Foot, Equestrian. and Trailbike
- L6 Trail Construction/Reconstruction - Special Uses
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads- Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transpoltation Management, Trails - Restricted Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Reduce the threat of a large fire emerging from the canyonlands by reducing fuel concentrations in plantations. Resolve silvicultural and fire concerns by gradually converting the plantations into even-aged stands of various age classes. This practice will involve some tradeoffs of timber growth (regenerating prior to rotation age) in order to achieve the goals of a regulated age class distribution. A specific fire protection management plan will be developed for areas with extensive plantations.

Reduce concerns about existing mineral claims by intensify enforcement of mining regulations.

Land within the unroaded North Fork of the Middle Fork of the American River Canyon and Eldorado Canyon will be managed with an emphasis on wildlife and watershed values rather than timber production.

Develop a spotted owl management plan for SOHA S-2.

Develop a management plan for the Western States and Tevis Cup Trails.

VII. SPECIFIC MONITORING AND EVALUATION

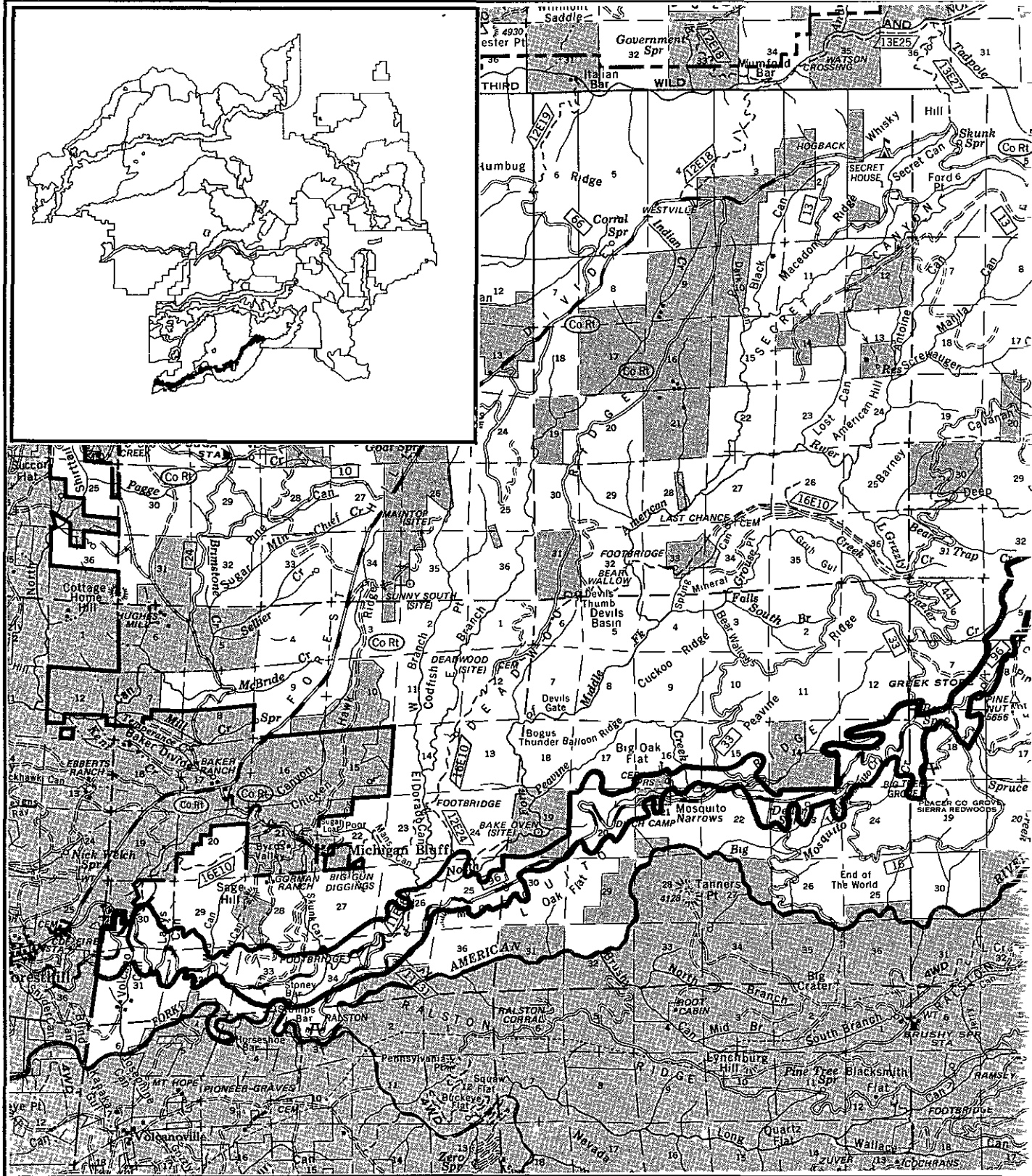
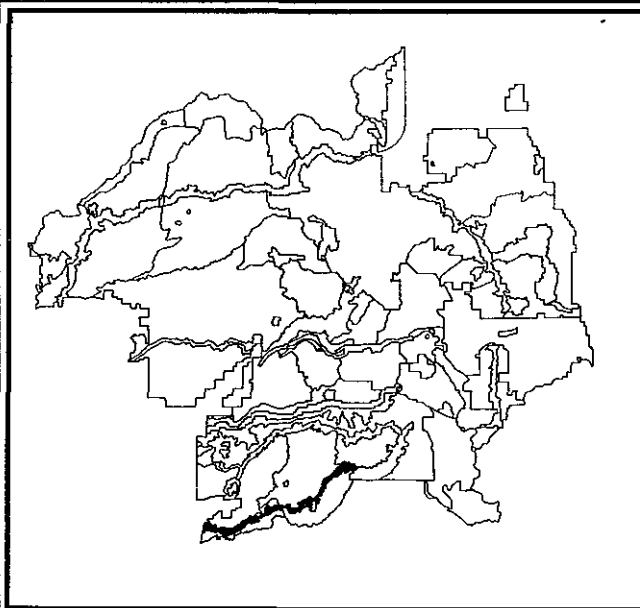
Monitor the effects of 1) reducing fuel concentrations in plantations and 2) the effect of the gradual conversion of plantation age classes on timber growth. Monitor use of OHV trails.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 099

MOSQUITO

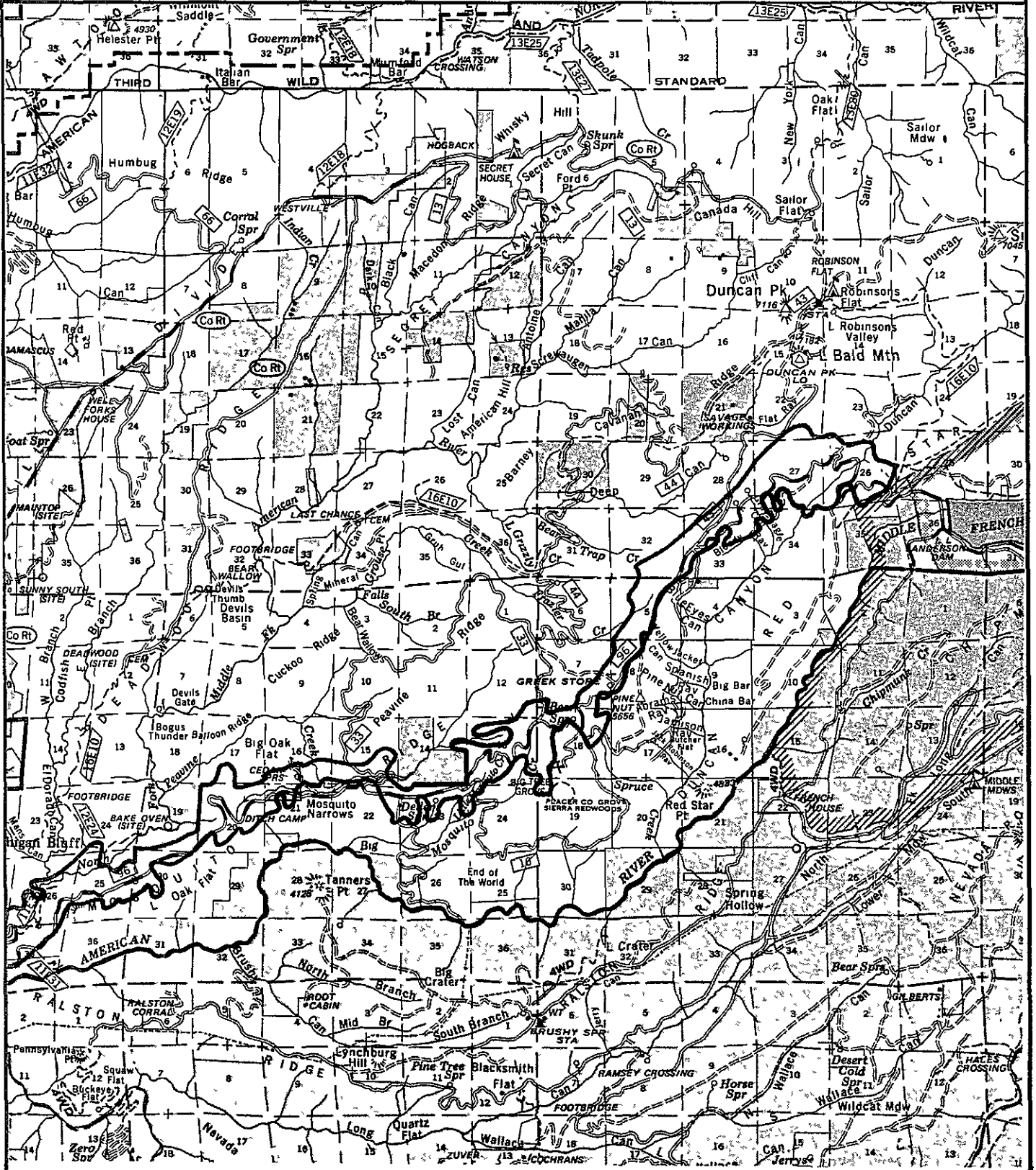
T14N, R12E



MANAGEMENT AREA 099

MOSQUITO

T14N, R12E



099 MOSQUITO

6,514 GROSS ACRES

6,191 NFS ACRES

I. DESCRIPTION

This management area (**MA**) contains the roadside corridor (visual foreground) of the Mosquito Ridge Road from the west boundary to Red Star Ridge. The area traverses the Middle Fork American River, the North Fork of the Middle Fork American River, and Mosquito Ridge. Elevations range from 1,400 feet at the North Fork of the Middle Fork to 6,000 feet on Mosquito Ridge. The Volcano Fire burned through the western portion of this **MA** in 1960. A mutual aid fire protection agreement exists with the California Department of Forestry for the portion of the area from the Forest boundary to the Circle Bridge.

Vegetation includes mixed brush and hardwoods in the canyons, and mixed conifers at higher elevations. There are 166 acres of wetlands. There are 55 acres of unsuitable productive forest land.

Other notable features include the American River Overlook, the Circle Bridge, the rugged cliff section of the road in the North Fork of the Middle Fork, the Foresthill District Forest Service Work Center, and the Foresthill Mobile Home Park. The Foresthill Telephone Company phone line crosses the area. The **MA** passes through the Mosquito Ridge Grazing Allotment. Mosquito Ridge Road (Forest Highway #96) is a major arterial road.

Portions of spotted owl habitat areas V-1 and W-1 lie within this **MA**.

Selected emphasis species include spotted owl, goshawk, pileated woodpecker, bald eagle, and the hardwood group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The visitor driving the Mosquito Ridge Road is likely to be concerned with visual quality. Opportunities include wildlife habitat improvement and visual enhancement of view areas along Mosquito Ridge Road.

The continuous fuelbed in the foreground and the canyons and the high road use are concerns for controlling fire and protecting plantations above the Foresthill Divide.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize maintenance or improvement of visual quality by maintaining the large character trees in the immediate foreground view area.

Even-aged management will be employed in the remainder to achieve the desired visual quality.

All prescriptions will consider safety of the forest visitor. Both administrative sites will continue to be managed for administrative purposes.

In the foreground of the Mosquito Ridge Road, the desired future state is continuous forest cover and/or a mosaic of small, even-aged groups meeting visual quality objectives.

In all other areas, the desired vegetative state is a mosaic of even-aged timber stands consisting of age classes from 0 to 150+ years, meeting visual quality objectives.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roded natural
- B Visual Quality Objective - Retention in foreground as viewed from Mosquito Ridge Road (FH #96) Partial retention for remaining area (midground and background) Modification for Foresthill Administrative Site
- C Transportation Management Policy - New and existing roads open
- D Off-Highway Vehicle Restrictions - Designated routes only summer Open to over-the-snow travel
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 **Open OHV**
- A5 **Restricted OHV**
- A8 Developed Recreation & Interpretive **Service** Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or **Site Construction or Rehabilitation**
- A13 Development or Rehabilitation of Private & Other Public Recreation **Facilities**
- A17 Visual Resource improvement

- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral **Stage** Vegetation Management
- C8 **Structural H a b i i** Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting **Method**
- E3 **Overstory** Removal Cutting Method
- E4 **Intermediate Cutting** - Existing **Stands**
- E5 **Commercial Thinning** - Regenerated **Stands**
- E6 Seed Tree **Cutting** Method
- E7 Special Cutting
- E6 Uneven-Age Cutting Method
- E10 **Artificial Stand Reestablishment**
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable **Withdrawals**
- G5 **Minerals** Management - Saleables

- J1 Land Adjustments - Retain and Acquire

- L1 Timber **Access** Road Development - Road **Construction/Reconstruction**
- L2 **Multiresource** Road Access Development - Road **Construction/Reconstruction**
- L5 Trail **Construction/Reconstruction** - Foot, Equestrian & Trailbike
- L6 Trail **Construction/Reconstruction** - Special Uses
- L7 FA80 **Construction/Reconstruction**
- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - **Restricted Use**

- P5 Fire Protection - Visual, High Use, **Reservoirs** Improvement

VI. **PROPOSED RESOLUTION OF ISSUES AND CONCERNS**

Manage the area to retain visual quality. Seek opportunities to improve visual quality in areas where the landscape has been modified.

The threat of a large fire emerging from the canyonlands could be reduced by breaking up fuel continuity. Under burning is a method of reducing the fuelbed with a short-term effect (5 years) of lowering the visual quality experience.

Develop spotted owl management plans for SOHA's V-1 and W-1.

VII. **SPECIAL MONITORING AND EVALUATION**

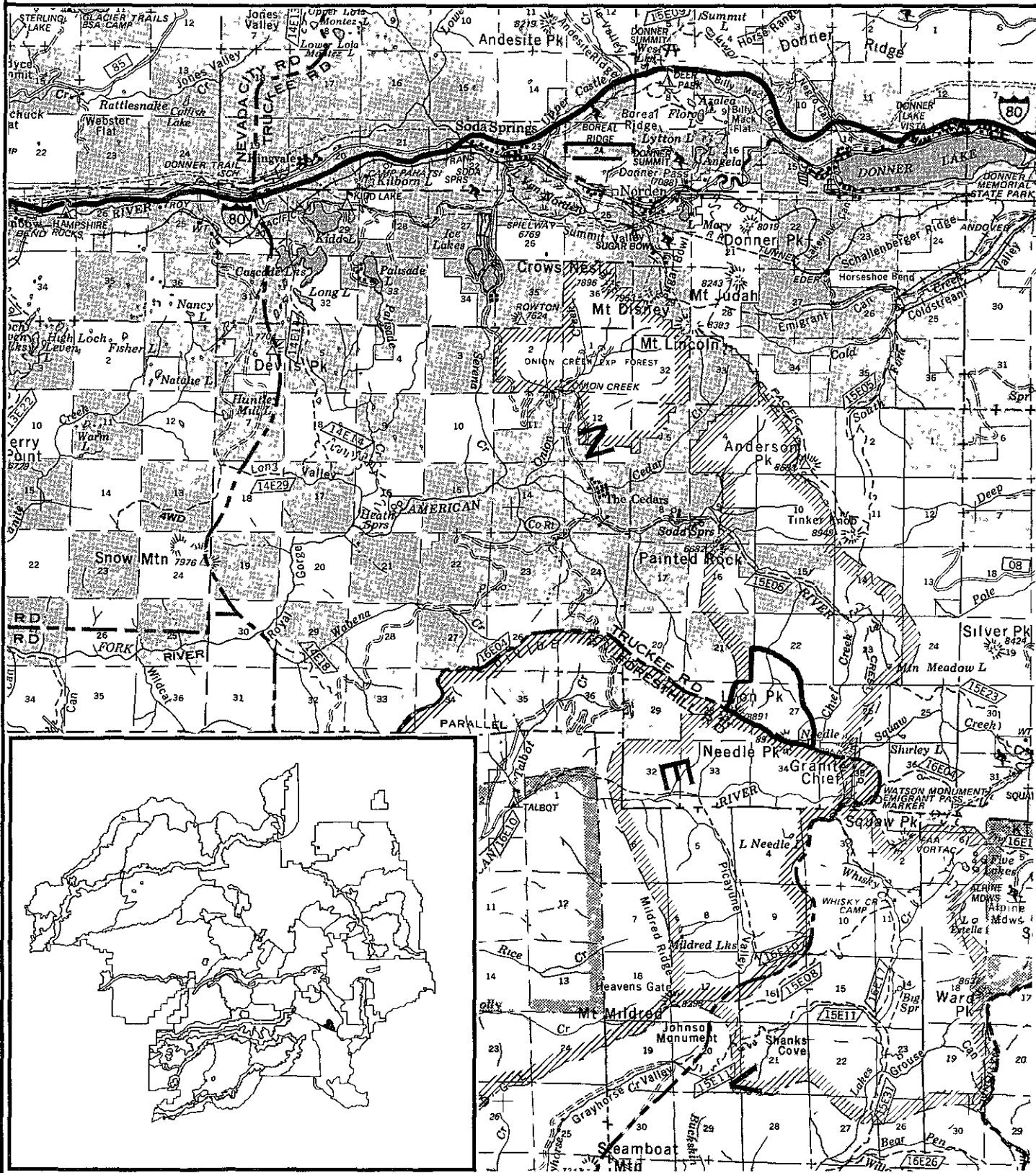
None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 100

LYON PEAK/NEEDLE LAKE

T16N, R15E



100 LYON PEAK/NEEDLE LAKE

700 GROSS ACRES

700 NFS ACRES

I. DESCRIPTION

This management area (MA) is located north of the northern boundary of Granite Chief Wilderness in Sections 22, 27, 28, and 34, T.16N., R.15E., MDB&M, (Norden Quadrangle) The elevation varies from about 7,200 feet to 8,900 feet

There is limited public access to this area because it is 'land-locked' to the north by private lands. There is some access on unimproved Forest Service trails to the east and access could occur from Granite Chief, Needle Lake, and Lyon Peak along the top of the ridge.

Vegetation consists of stands of red fir and mountain hemlock. There are 35 acres of wetlands within the 7W acres of unavailable forest land.

The selected wildlife emphasis species are deer, rainbow trout, and the meadow and riparian groups

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

A management concern is to inventory and establish acres that contribute to the preservation of all significant natural ecosystems for purposes of research, ecological study, and to maintain gene pools.

This MA qualifies for designation as a Research Natural Area

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to manage for the preservation and protection of the natural ecologic features. Through procedures outlined in FSM 4063, this MA will be evaluated and recommended for classification by the Chief of the Forest Service as a Research Natural Area representing mountain hemlock. This area is unsuited for timber management. Study this MA to determine boundary location.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive, nonmotorized
- B Visual Quality Objective - Preservation
- C Transportation Management Policy - Closed
- D Off-Highway Vehicle Restrictions - Closed.
- E Forestwide Standards and Guidelines - The only Forestwide Standards and Guidelines that apply are 1, 3, 9, 17, 22, 23, 60, 64, 67, 68, 82, 83, and 84

V. AVAILABLE MANAGEMENT PRACTICES^{2/}

A6 Closed OHV

Ai6 Research Natural Areas

G2 Minerals Management- Locatable Withdrawals

G4 Minerals Management- Leasable Withdrawals

J1 Land Adjustments - Retain and Acquire

L4 Trail Construction/Reconstruction - Foot and Equestrian Traffic Only

P4 Fire Protection - Research Natural Areas

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Recommend this MA as a Research Natural Area and manage as such until designation. Portions of the MA not designated as a Research Natural Area will be allocated to MA 79 (Cedars).

VII. SPECIFIC MONITORING AND EVALUATION NEEDS

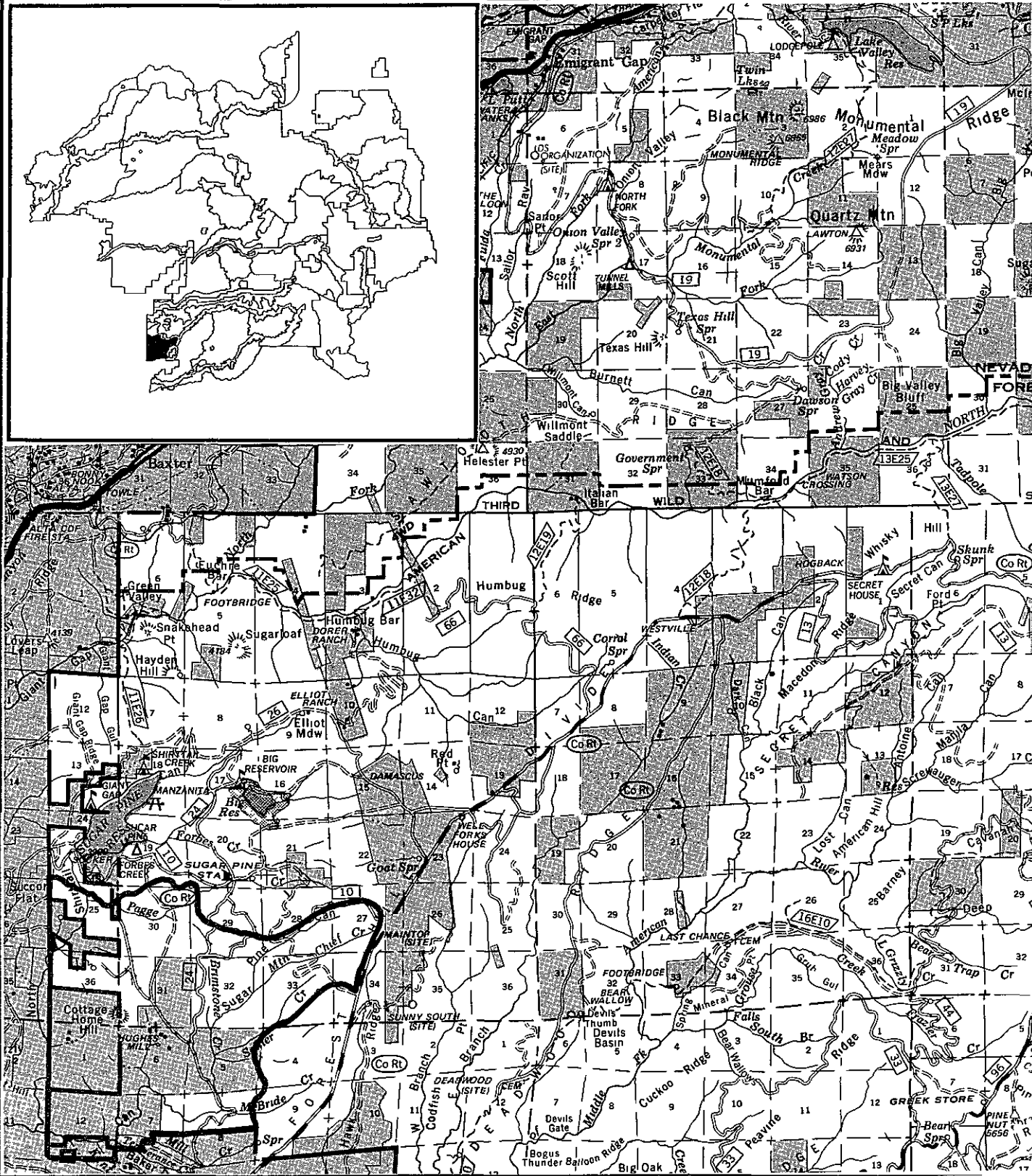
Forest Service and universities may monitor for research purposes.

^{1/} Refer to Resource Support Element Maps and Forestwide Standards and Guidelines.
^{2/} Refer to complete descriptions of management practices in Chapter V

MANAGEMENT AREA 101

BRIMSTONE

T14N, R11E



101 BRIMSTONE

6,533 GROSS ACRES

4,172 NFS ACRES

I. DESCRIPTION

This one management area (MA) includes the following physical and administrative features. McBride, Brimstone, Pagge and Sugar Pine Creeks, the Sugar Pine pipeline and access roads, a 12-KV powerline, and the old Hughes Mill. The area is characterized by gently rolling uplands dissected by numerous perennial streams. Elevation ranges between 3,000 and 4,400 feet.

Fire history includes the Volcano Fire and the Hughes Mill Fire.

A large portion of the Volcano Plantation is within this management area. The plantation consists of ponderosa pine trees established in the early 1960's. Stringers of hardwoods and brush (300 acres) extend into the plantation along Sellier and Mountain Chief Creeks. Outside of the plantation, the vegetation is characterized by mixed conifer and hardwood stands of various sizes and age classes. There is no significant wetland acreage. There are 295 acres of unsuitable productive forest land.

The area includes many inactive chrome mines and several old sawmill sites. About 90 percent of the MA is accessed. Second and third cycle timber harvesting is presently underway within the roaded portions. A portion of the Sugar Pine Grazing Allotment lies within this MA.

An OHV trail system has been developed in recent years with trails serving motorcycles, ATVs, and 4-wheel drive vehicles.

Selected emphasis species are deer, rainbow trout, and the riparian group.

National Forest System land in Section 8 and a portion of Section 7, T 14N, R. 11E, is considered land exchange base with timber management activities presently foregone.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

Two concerns stem from the large acreages of continuous plantation. The first is a silvicultural concern about lack of diversity and age class distribution. The second concern is that the plantations represent a continuous fuel source which, under the right conditions, could carry a devastating crown fire.

There is an opportunity to manage hardwood/brush stringers for wildlife habitat.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitional range created by timber harvest and fuels management. Emphasize wildlife and watershed values when managing in streamside management zones and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing recreation development sites, special-use permit areas, etc.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-size stands in the mixed conifer and hardwood-conifer forest types. Manage these stands on a short rotation schedule of 50 to 120 years. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural.
- B Visual Quality Objective - The primary access route to Sugar Pine Reservoir, Road 10 (Sugar Pine Road) has a foreground VQO of retention. The Brimstone Road (24), has a foreground VQO of partial retention. Modification for remainder. Maximum modification will be allowed on a case-by-case basis.
- C Transportation Management Policy - Forestwide Standards and Guidelines will apply.
- D Off-Highway Vehicle Restrictions - Designated routes only.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A5 Restricted OHV
- A0 Developed Recreation & Interpretive Service Sites Management, Public Sector
- AS Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- ~~C2~~ Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Mid Succession Vegetation Management
- ~~C8~~ Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- ~~D8~~ Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- F1 Water Resource Improvement
- ~~F4~~ Soils Resource Improvement

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- ~~L2~~ Multiresource Road Access Development. Road Construction/Reconstruction
- ~~L5~~ Trail Construction/Reconstruction - Foot, Equestrian and Trailbike
- ~~L8~~ Transportation Management, Roads - Open
- ~~L9~~ Transportation Management, Roads - Regulated Use
- ~~L10~~ Transportation Management, Roads - Closed
- ~~L11~~ Transportation Management, Roads - Obliterated
- ~~L12~~ Transportation Management, Trails - Open

Li3 Transportation Management, Trails - Restricted Use

P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Develop specific fire protection management plans for areas with extensive plantations

Reduce fuel concentration in plantations. Resolve silvicultural and fire concerns by gradually converting the Volcano Plantation into even-aged stands of various age classes. This practice will involve some tradeoffs of timber growth (regenerating prior to rotation age) to achieve the goal of a regulated age class distribution.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor OHV use on the newly constructed trails. Monitor the effects of 1) reducing fuel concentrations in plantations and 2) the effects of gradual conversion of plantation age classes on timber growth.

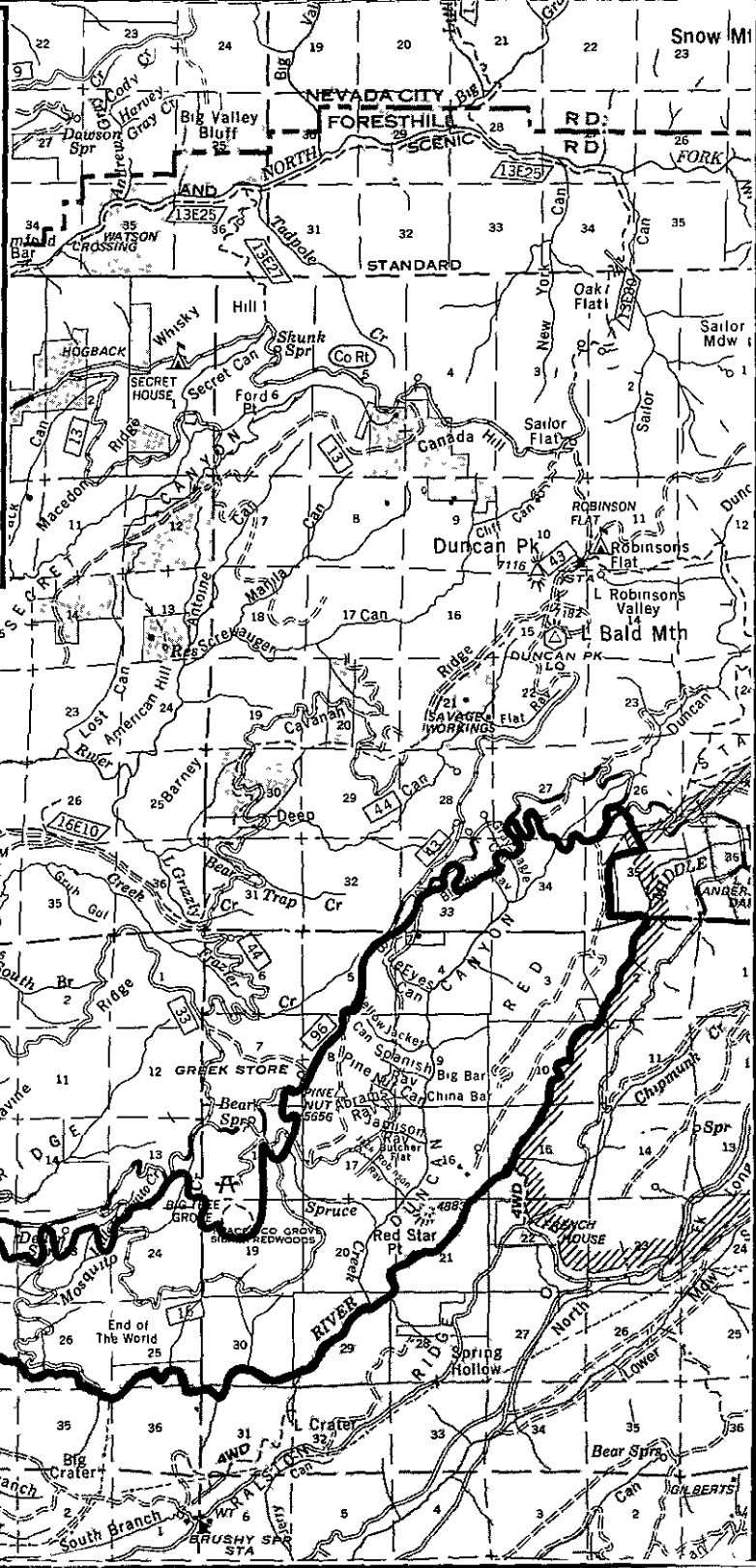
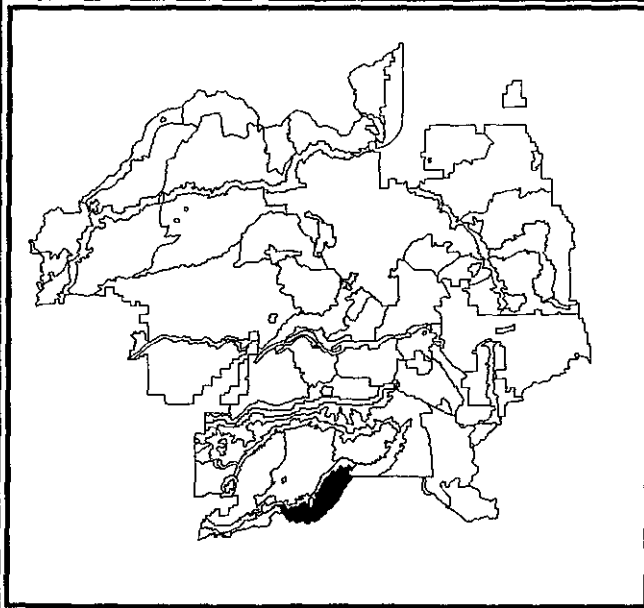
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 102

END OF THE WORLD

T14N, R13E



102 END OF THE WORLD

10,813 GROSS ACRES

9,308 NET ACRES

I. DESCRIPTION

This management area (MA) is bounded by Mosquito Ridge road (Mosquito MA) on the north, by the Middle Fork of the American River on the south, and extends from the French Meadows area to Mosquito Narrows. The area includes the following physical and administrative features: lower Duncan Canyon, Middle Fork Canyon, Placer County Water Agency Interbay Diversion Dam and access road, and numerous mining claims.

Elevation ranges from 2,400 feet in the Middle Fork American River canyon to 6,000 feet on Red Star Ridge. Predominant aspects are northwest and southeast.

The vegetation is mixed conifer timber stands on the sideslopes of Duncan Canyon, Mosquito Creek, and Spruce Creek, and brush-hardwoods on the lower elevations south-facing slopes. There are 122 acres of wetlands. There are no acres of unsuitable productive forest land. This MA contains portions of the Mosquito and Chipmunk Grazing Allotments.

Over 50 percent of the MA is presently accessed, specifically the Mosquito Ridge and Red Star Ridge portions, as well as the more gently sloping lands in Duncan Canyon. Second-entry timber harvesting is presently underway within the roaded portions.

Fire history includes the 1924 Greek Store burn as well as frequent lightning fires, with the most recent major fire being the Big Fire of 1987, a lightning-caused fire of 1,000 acres.

A portion of spotted owl habitat areas W-1 and V-1 lie within this MA.

Selected emphasis species are deer, spotted owl, rainbow trout, and the riparian group.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is a concern to maintain water quality of Duncan Canyon because it is a high-quality fishery that drains large areas of commercial forest land.

Fall storms, often during deer season, tend to trigger a somewhat concentrated migration from upper elevations through this MA. The concern is that management activities not unduly affect deer migration survival because of cover deficiencies.

Greek Store is identified as a key deer holding area. Timber harvesting and vehicle use could adversely affect deer in the holding area.

There is a concern for the regeneration of the local giant sequoia strain, which occurs naturally only in the small adjacent Big Tree MA.

Opportunities include hardwood management, use of transitory range created by timber harvesting, and development of a transportation system to access and manage lands in Duncan Canyon.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphasis is regulated intensive even-age timber management. Emphasize range management on the transitory range created by timber harvest.

Emphasize wildlife and watershed values when managing in streamside management zones, spotted owl habitat areas, and where threatened and endangered species' habitats occur. Practice unregulated timber management on lands unsuited for timber production, such as existing recreation development sites, special-use permit areas, etc.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-size stands of the mixed conifer type. Manage these stands on a short rotation schedule of 50 to 120 years.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Routed natural for most of the area and ~~semi-primitive~~ motorized in the Middle Fork of the American River Canyon
- B Visual Quality Objective - Foreground retention and middleground ~~partial~~ retention as seen from French Meadows Dam Partial retention for the SPM area along the Middle Fork of the American River and modification for remainder of the management area Maximum modification will be permitted on a case-by-case basis

Dung project planning consider meeting higher than the prescribed modification VQO such as partial retention VQO for foreground and middleground on the east slope of Red Star Ridge as seen from Road #22 on the Eldorado N.F. and middleground on the west slope of Red Star Ridge as seen from Highway 96
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Off-Highway Vehicle Restrictions - Designated routes only except seasonal closure of deer holding area during the period September 15 to December 31 annually During winters with low precipitation, this area will be closed This restriction can be amended if weather conditions are such that deer are not on the holding area
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open ~~O W~~
- A5 Restricted OHV
- A6 Closed ~~O W~~

- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- ~~C2~~ Stream Fisheries - structural Improvement and Maintenance
- ~~C5~~ Early Succession Vegetation Management
- ~~C6~~ Mid Succession Vegetation Management
- ~~c 7~~ Late Seral Stage Vegetation Management
- ~~C8~~ Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - ~~Transitory~~ Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and ~~Transttory~~)
- D8 Range Improvement - Structural (Permanent and ~~Transttory~~)

- E1 Clearcut Cutting Method
- ~~E2~~ Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- ~~E6~~ Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven-Age Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable ~~Wtthdrawals~~
- G3 Minerals Management - Leasables
- G5 Minerals Management - Saleables

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multi-resource Road Access Development - Road Construction/Reconstruction
- L5 Trail ~~Construction/Reconstruction~~ - Foot, Equestrian, and Trailbike
- L7 FA80 Construction/Reconstruction
- L8 Transportation Management, Roads - Open

- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use

P1 Fire Protection- Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Seasonal closure of some roads may be necessary to mitigate unacceptable impacts on deer using the holding area during migration or mild winters. Protect the Greek Store holding area from logging and other disturbance during deer use. Manage deer habitat to provide a 60-40 forage-cover mixture.

Consider migration route habitat during project planning, especially on Red Star Ridge.

Plant progeny of the local giant sequoia strain in selected locations to help assure perpetuation of the gene pool.

Develop spotted owl management plans for SOHAs W-1 and V-1.

VII. SPECIFIC MONITORING AND EVALUATION

Monitor water quality of Duncan Creek

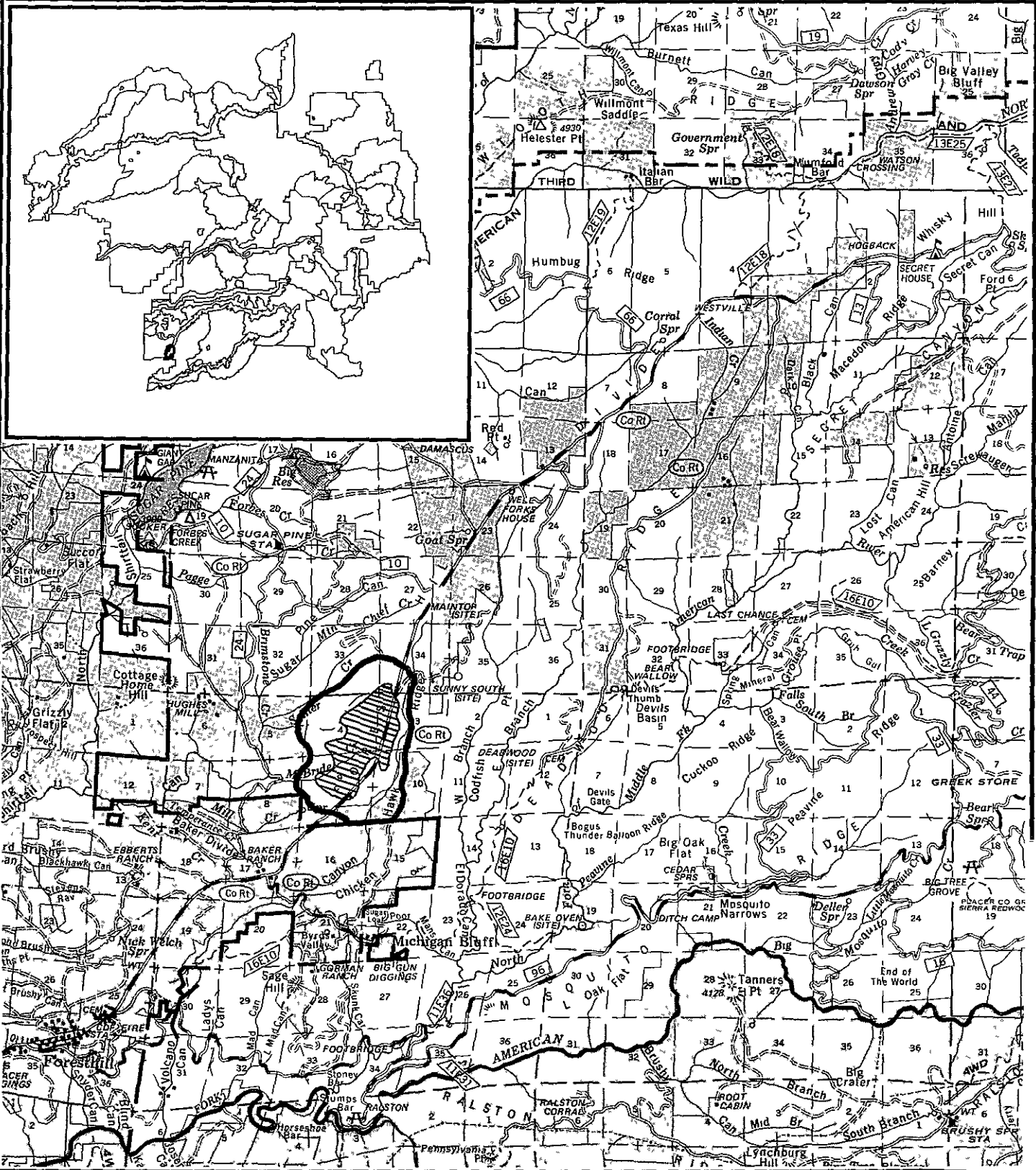
Monitor management activities in riparian areas and the effects of seasonal road closures on wintering deer herds. Coordinate with California Department of Fish and Game.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 103

WEST ORCHARD

T14N, R11E



103 WEST SEED ORCHARD

1,104 GROSS ACRES

1,038 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 5 miles northeast of Foresthill on the Foresthill Divide Road in the headwaters of McBride and Sellier Creeks. Elevation ranges from 3,600 to 4,400 feet. Slopes range from flat to 20 percent, except for a few steeper portions that drop into the McBride and Sellier drainages. The entire area was burned over in the 1960 Volcano Fire and, with the exception of a small pocket of timber in the southern portion, was subsequently reforested with ponderosa pine plantations. The Foresthill Divide Road is two lanes wide and paved.

The management area surrounds the Foresthill Divide Seed Orchard (MA 064) and acts as a buffer zone, preventing wind-blown white fir, Douglas-fir, and sugar pine pollen from entering the seed orchard.

There are no wetlands within the MA. There are 835 acres of unsuitable productive forest land. Certain brushfields in the Sellier drainage were not identified for reforestation needs because of recognized wildlife values. There are several OHV routes within the area.

Selected wildlife emphasis species are deer and the riparian group.

The area is within the Sugar Pine and Volcano Grazing Allotments.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

A concern is exclusion of species that will be open pollinated in the seed orchard (white fir, Douglas-fir, and sugar pine). Visual quality is a concern because of the heavily traveled Foresthill Divide Road. An opportunity exists to modify the even-aged plantations for a pleasing visual experience. In the future, grass maintained for ground cover could provide a livestock grazing opportunity. There is an opportunity to improve wildlife habitats.

III. RESOURCE MANAGEMENT EMPHASIS

Along the Foresthill Divide Road, the desired future vegetative state is a mosaic of even-aged timber stands meeting visual quality objectives.

The major resource emphasis is regulated intensive even-age timber management, with a restricted component of white fir, Douglas-fir, and sugar pine. Emphasize range management on the transitory range created by timber harvest.

Emphasize wildlife and watershed values when managing in streamside management zones and where threatened and endangered species' habitats occur. Unscheduled timber harvest may be practiced on lands unsuited for timber production, such as existing recreation development sites, special-use permit areas, etc.

The desired future condition for lands intensively managed for timber production consists of plantations through small sawlog-sue stands in the mixed conifer and hardwood-conifer forest types. Manage these stands on a short rotation schedule of 50 to 120 years. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Roaded natural
- B. Visual Quality Objective - Modification except partial retention along Foresthill Divide Road
- C. Transportation Management Policy - Forestwide Standards and Guidelines apply
- D. Off-Highway Vehicle Restrictions - Designate routes only
- E. Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-County Skiing
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A11 Recreation or IS Site Construction or Rehabilitation

- C5 Early Succession Vegetation Management
- C6 ~~Midsuccession~~ Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Geed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleables

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Timber Source Road Access - Road Construction/Reconstruction
- L3 Trail Construction/R - For Equestrian and Trailbike
- L6 Trail Construction/Reconstruction -
- L7 FA80 Construction/Reconstruction
- L8 Transportation Management, Roads - C
- L9 Timber Management, Roads - Regulated Use
- L10 Timber Management, Roads - Closed
- L11 Timber Management, Roads - C
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Regulated Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Prevent cross-pollination to protect the adjacent tree improvement area by eliminating white fir, Douglas-fir, and sugar pine pollen producing trees in applicable areas

Maintain visual quality by using long rotations and small-stand projects along the Foresthill Divide Road

Manage brushfields for wildlife habitat

Reduce fuel concentrations in plantations. Resolve silvicultural and fire concerns by gradually converting the plantations into even-aged stands of various age classes. This practice will involve some tradeoffs of timber growth (regenerating prior to rotation age) in order to achieve the goal of a regulated age class distribution.

VII. SPECIFIC MONITORING AND EVALUATION

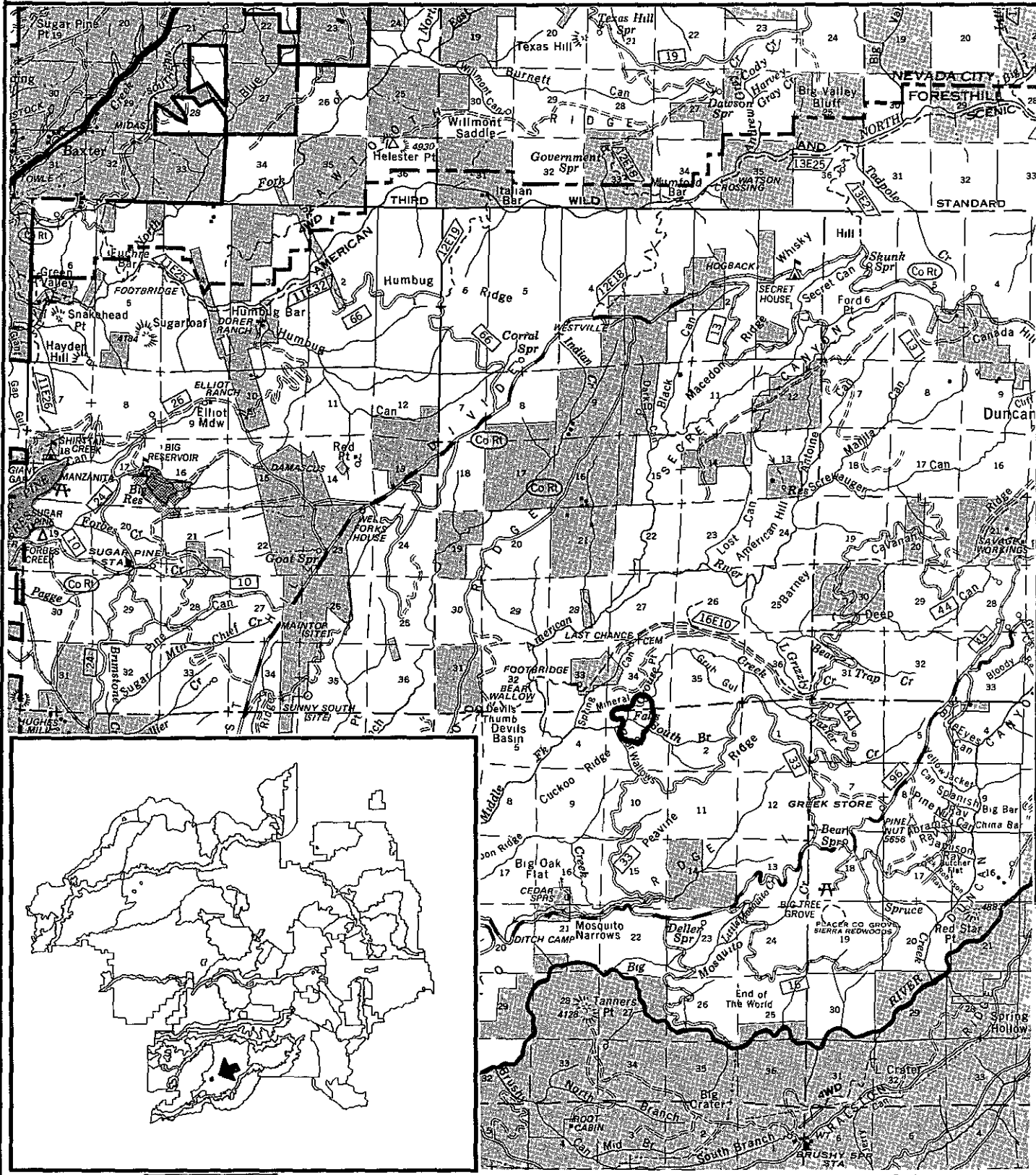
Remove existing white fir, Douglas-fir, and sugar pine trees as necessary to prevent cross-pollination with seed orchard trees.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 104

GROUSE FALLS

T14N, R12E



104 GROUSE FALLS

220 GROSS ACRES

220 NFS ACRES

I. DESCRIPTION

This management area (MA) is located on Grouse Creek, a mile above its confluence with the North Fork of the Middle Fork American River. The falls are in a steep, rugged canyon, reached only by a primitive trail. Because of its location and the steep unroaded canyons of Grouse Creek and North Fork of the Middle Fork American River, the area receives little recreation use.

This MA is classified as the Grouse Falls Scenic Area (SIA).

Wetland acreage is minor. There are 186 acres of unsuitable productive forest land. There are no selected emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

A management concern is to inventory and protect Special Interest Areas containing geologic, ecologic, or cultural features. Grouse Falls has previously been identified as having outstanding scenic features. No previous scenic areas have been classified on the Forest. Grouse Falls appears to be qualified for designation as a recreation area under 36 CFR 294.1. An opportunity exists to provide for visitor access.

III. RESOURCE MANAGEMENT EMPHASIS

Emphasize protection of the scenic qualities. Through procedures outlined in FSM 2361 and pursuant to 36 CFR 294.1 (a), complete an Implementation Plan including the identification of exact boundaries. Any portion of this MA not included for protection will be managed as part of MA 092 (Peavine). The area is unsuited for regulated timber production.

Roads or overnight recreation facilities will not be permitted in this MA.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Semi-primitive nonmotorized.
- B Visual Quality Objective - Retention.
- C Transportation Management Policy - No roads permitted.
- D Off-Highway Vehicle Restrictions - Closed.
- E Forestwide Standards and Guidelines - All apply except 25, 26, and 31.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A6 Closed OHV
- A15 Special Interest Area Investigations and Management

- G2 Minerals Management- Locatable Withdrawals
- ~~G4~~ Minerals Management- Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L13 Transportation Management, Trails - Restricted Use

- P5 Fire Protection -Visual, High Use, Reservoirs & Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

This MA has been classified as the Grouse Falls Scenic Area pursuant to Title 36 CFR 294.1 (a) and the authority vested in the Regional Forester by the Chief, Forest Service

After field evaluation is made, boundaries of the Grouse Falls Scenic Area will be mapped and included in the Implementation Plan for the Scenic Area. Portions of the MA not included in the Scenic Area will be allocated to Management Area 092 (Peavine)

Construct a trail to provide visitor access to Grouse Falls

Protect and preserve the unique features of this MA. Plan appropriate visitor interpretive services

VII. SPECIFIC MONITORING AND EVALUATION

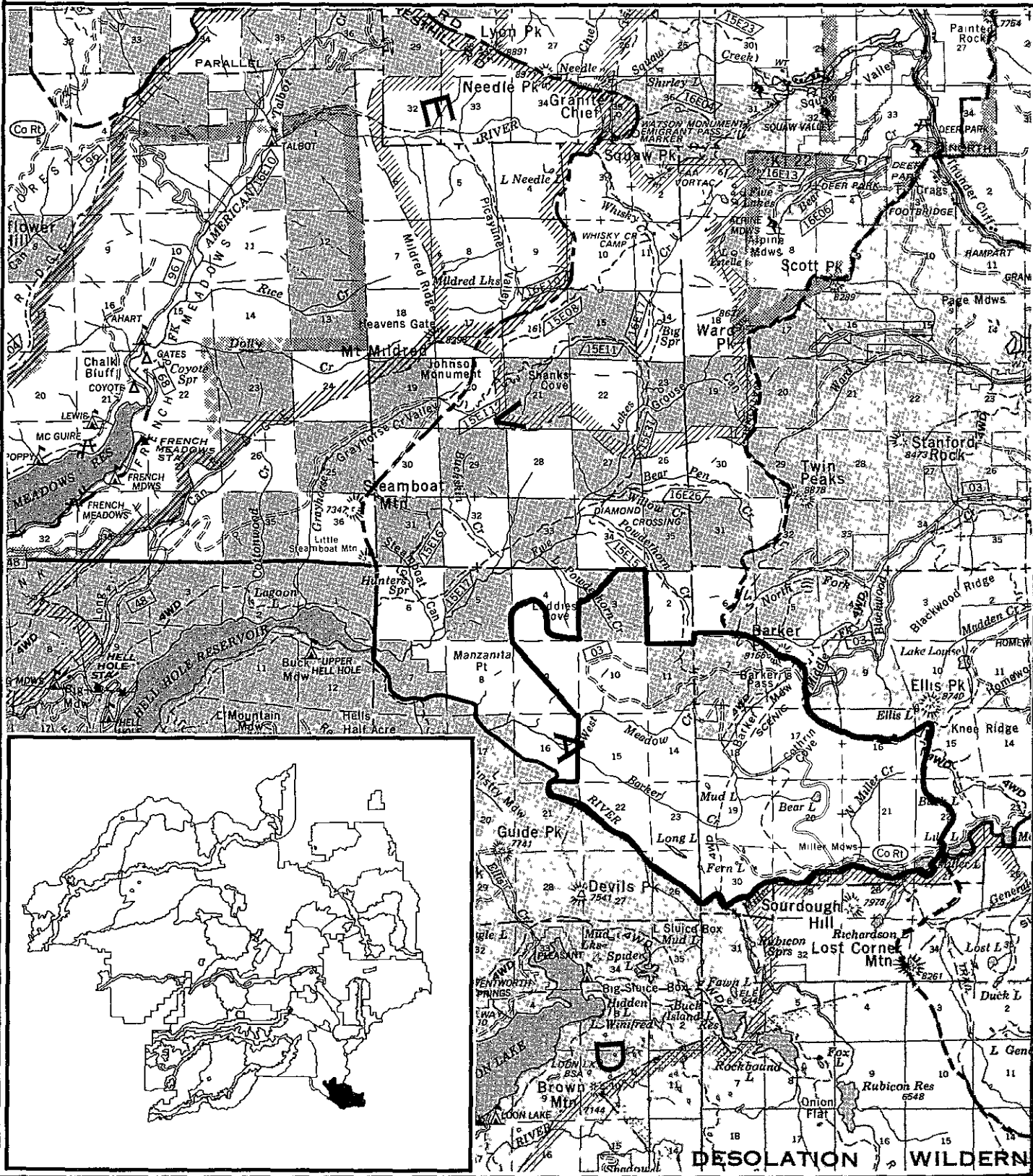
Forest Service and research Institutions may monitor for research purposes

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 105

BARKER

T14N, R15E



105 BARKER

10,290 GROSS ACRES

7,810 NFS ACRES

I. DESCRIPTION

This management (MA) area is bounded on the north by Manzanita Point and Barker Peak, and on the south by McKinney Creek, the Rubicon River, and the Eldorado National Forest. The Lake Tahoe Basin Management Unit (LTBMU) is on the east. Elevations range from 5,000 to 8,700 feet. The topography varies from flat meadows to steep, rugged peaks and canyons, the aspect is generally southwestern. Bear, Mud, Meadow, Fern, and Long Lakes are within the area.

Past use was primarily grazing and mining. The historic Rubicon Stage Road from Lake Tahoe to Georgetown traverses the southern edge of the area. Timber harvesting began in the 1950's. Additional timber harvest and road development occurred with the Barker Sale (1982). The Cannon exchange lands were logged during 1983 and 1984 by the owner of the timber. No major fires have occurred in recent times.

The area is very accessible via a system of Forest Service and County roads. Primary roads are Placer County #W3013, McKinney-Rubicon Springs Road, and Forest Service #15N03, Barker Pass Road. The proposed National Recreation OHV Trail and the Rubicon-Wentworth Spring Jeep Trail both end in this MA.

The Pacific Crest Trail runs north to south through this MA.

The predominant vegetation is mixed conifer with true fir stands occupying the higher elevations. Numerous meadows are surrounded by lodgepole stands. There are 670 acres of wetlands. There are 0 acres of unsuitable productive forest land. Barker Creek, Miller Creek, and the Rubicon River are the principal drainages. A portion of the Sierra Crest Grazing Allotment is within this MA. Heavy OHV use occurs within this area.

The selected emphasis species are deer, rainbow, brown, and brook trout, and the riparian and mountain meadow groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is a visual concern about the view from the Barker Pass Road, the Niehaus Road, the McKinney Creek Road, and the many trails that traverse the area.

Resource damage is occurring from OHV use in the Miller Creek and Bear Lake areas.

Timber hauled from National Forest System and adjacent private lands could affect air quality and create traffic congestion in the LTBMU since access is through Barker Pass into the Lake Tahoe Basin.

Access to the SW portion of the MA in the Barker Creek drainage is limited and has very scattered timber. These two factors combined make economical, intensive timber management questionable.

There is an opportunity to improve wildlife habitat.

The opportunity exists for trailhead development for the Pacific Crest Trail and Powderhorn Trail, and for expanding designated OHV routes.

III. RESOURCE MANAGEMENT EMPHASIS

The major resource emphases are dispersed recreation, maintenance of the visual quality from key viewing stations, and regulated intensive even-age timber management. Emphasize range management on the transitory range created by timber harvest.

Wild and Scenic river values will be protected for the Upper Rubicon River from Hell Hole Reservoir and up until such time as eligibility and if required suitability studies are completed and new management emphasis developed.

Emphasize wildlife and watershed values when managing in streamside management zones. Unscheduled timber harvest activities may be practiced on lands unsuitable for timber production, such as existing and potential recreation development sites, special-use permit areas, etc. Use regulated timber management on a long rotation basis within the limited access area of Barker Creek (SW portion of the MA).

The desired future condition for lands intensively managed for timber production consists of plantations through large sawlog-sue stands of the mixed conifer type. Manage these stands on a long rotation schedule of 150 years. The desired future condition in red fir and lodgepole stands is even-aged plantations through large sawtimber-size trees. Rotation ages for these stands will be about 150 years. High elevation (generally above 5,500) mixed conifer stands in the visually sensitive and scenic areas (lands with retention initial VQO's and variety class A status) will be similar in condition to the red fir and lodgepole stands. The remaining land within the management area will be similar to the present condition.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural, semi-primitive motorized for the southwest portion of the MA
- B Visual Quality Objective - Partial retention for foreground and middleground as seen from all County and Forest System roads, trails, and concentrated use areas
- C Transportation Management Policy - Forestwide Standards and Guidelines apply
- D Off-Highway Vehicle Restrictions - Designated routes only summer Over-the-snow. open.
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- C1 Stream Fisheries - Nonstructural Improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C3 Lake Fisheries - Nonstructural Improvement and Maintenance
- C4 Lake Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Stage Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)
- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree and Cutting Method
- E7 Special Cutting
- E8 Uneven-Age Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning
- F1 Water Resource Improvement
- F3 Flow Timing Improvement
- F4 Soils Resource Improvement
- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasable
- G4 Minerals Management - Leasable Withdrawals

- G5 Minerals Management - Saleables
- J1 Land Adjustments - Retain and Acquire
- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiple Resource Road Access Development - Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L4 Trail Construction/Reconstruction - Foot & Equestrian Traffic Only
- L5 Trail Construction/Reconstruction - Foot, Equestrian, and Trailbike
- L6 Trail Construction/Reconstruction - Special Uses
- L7 FA&O Construction/Reconstruction
- L8 Transportation Management Roads - Open
- L9 Transportation Management Roads - Regulated Use
- L10 Transportation Management Roads - Closed
- L11 Transportation Management, Roads - Obsolete
- L12 Transportation Management, Trails - Open
- L13 Transportation Management, Trails - Restricted Use
- L14 Pacific Crest National Scenic Trail
- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Continue to seek appropriated funds for fuels reduction and reforestation on the acquired Cannon lands. Because of the intensive dispersed recreation use, this will continue to be a high priority. Utilize an aggressive fuelwood program to assist in fuels reduction.

Resource damage in the Miller Creek area can be corrected by relocation, drainage, and vegetative stabilization coordinated with timber management practices, Placer County, and user groups.

Minimize OHV misuse at Bear Lake and other sensitive areas by increasing education, regulatory signing, installation of control devices, encouraging adopt-a-trail programs, law enforcement and a well constructed designated route system that offers a challenging and good recreation experience.

Improve air quality and congestion for the Lake Tahoe Basin by coordinating with concerned agencies through the LTBMU. An annual project coordination meeting with the LTBMU would be beneficial to both agency and land managers.

Minimize soil damage by controlling grazing intensity.

Continue feasibility study to identify trailhead requirements for the Pacific Crest Trail and Powderhorn Trail.

Develop new, stable routes and repair damaged sites in coordination with organized trail clubs and the California Department of Parks and Recreation's OHV program. Coordinate management of the road system to be compatible with OHV use in MA 80.

Manage the inner gorge of the Rubicon River as semi-primitive nonmotorized.

VII. SPECIFIC MONITORING AND EVALUATION

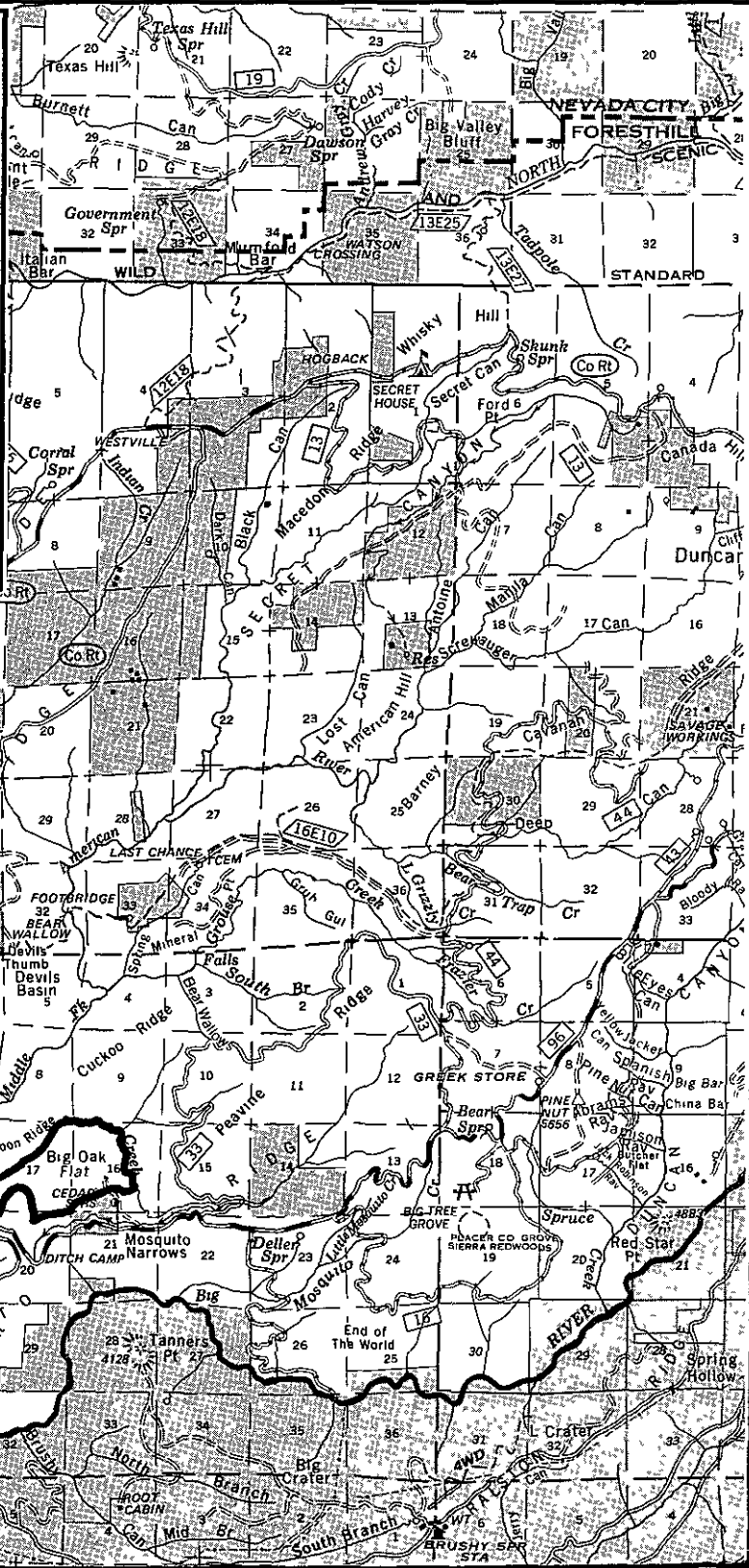
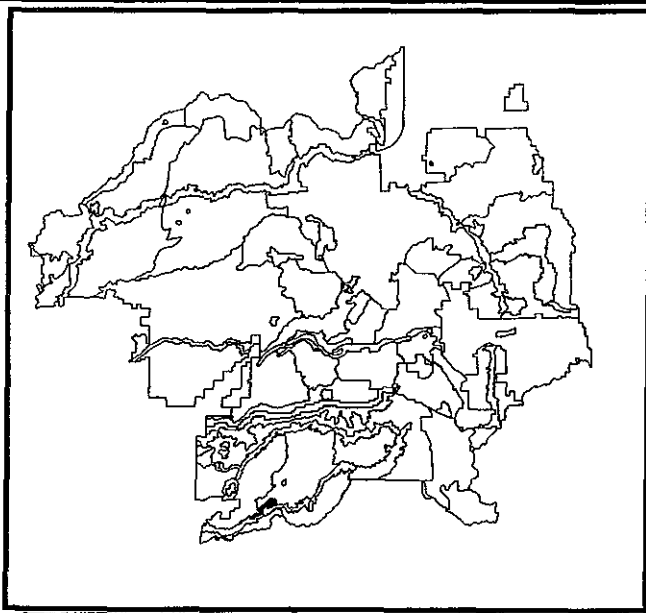
Continue to monitor grazing and OHV impacts on fragile soils.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 106

BIG OAK

T14N, R12E



106 BIG OAK

1,085 GROSS ACRES

717 NFS ACRES

I. DESCRIPTION

This management area (MA) is encompassed by Peavine Creek on the north and east, the North Fork of the Middle Fork American River on the west, and Mosquito Ridge on the south. The area includes Big Oak Flat and Peavine Creek. The elevation ranges from 2,000 feet at the North Fork of the Middle Fork American River to 4,000 feet on Big Oak Flat. The area is flat to very steep with a predominant aspect of north, northwest, and northeast.

Small timber sales have occurred within the area, and recently there was a large sale. Approximately 50 percent of the area is accessed. The vegetation consists of mixed conifer stands interspersed with large black oaks, and a few major black oak stands on the flat. The steep slopes are characterized by brush, hardwood stands, and scattered conifers. There are 32 acres of wetlands. There are 0 acres of unsuitable productive forest land.

The entire area is key winter range for the Blue Canyon Deer Herd. Disturbance during critical winter periods has occurred in the past. A deer herd management plan which provides coordination of forest activities and herd management, was developed in coordination with the California Department of Fish and Game. Peavine Creek is being monitored for macro-invertebrate species to determine timber harvest impacts.

A total of 40 acres of subdivided private land is located within the management area. It consists of one 32-acre parcel and four parcels from 1-1/2 to 3 acres in size. The larger parcel is zoned recreation and forestry by Placer County, with a 10-acre minimum building site. The 40 acres of private land are contiguous to an additional 80 acres of private land in an adjacent management area.

A private resort, and a few houses and trailers, are located on the private land. There are two private water rights on National Forest System lands. A telephone line is under special-use permit in the area. There are several occupancy trespasses for which resolution action is pending.

The selected emphasis species are deer, rainbow trout, and the riparian group. There is a coordinated timber-wildlife management plan for 400 acres in this MA.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There are trespass and right-of-way problems in the Flight Strip area.

There are disturbances to the deer herd during critical life cycle periods (November through April). Users from the adjacent private land, management activities, and vehicle use at 150 increase disturbances to the deer.

There are opportunities for producing fuelwood while improving the winter deer range, and for managing hardwoods for wildlife habitat.

III. RESOURCE MANAGEMENT EMPHASIS

Intensively manage wildlife habitat for deer and other indicator species. Regulated timber management will be coordinated to meet wildlife habitat requirements by using short rotation even-aged management and uneven-aged management on suitable sites.

The desired future condition is to obtain the ratio of 40 percent of the area in cover to 60 percent in forage areas of proper size and arrangement for deer. The vegetation will consist of three types: predominantly conifer stands, predominantly black oak stands, and a conifer-oak mixture of approximately 60 percent conifer and 40 percent black oak. The three types will consist of even-aged stands of various age classes distributed evenly over the area, as well as uneven-aged stands.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural
- B Visual Quality Objective - Modification Maximum modification will be allowed on a case-by-case basis
- C Transportation Management Policy - Regulated season road closure
- D Off-Highway Vehicle Restrictions - Designated routes only in summer Closed November 1 to May 1 This restriction can be amended if weather conditions are such that deer are not on the winter range
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- A6 Closed OHV
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities

- C1 Stream Fisheries - Nonstructural improvement and Maintenance
- C2 Stream Fisheries - Structural Improvement and Maintenance
- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C8 Structural Habitat Improvement and Maintenance

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven-Age Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatable
- G3 Minerals Management - Leasable
- G5 Minerals Management - Saleable

- J2 Land Adjustments - Limited

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development - Road Construction/Reconstruction
- L5 Trail Use - Equestrian and Trailbike
- L6 Trail Use - Other Uses
- L8 Road Management - Open
- L9 Road Management - Regulated Use
- L10 Road Management - Closed
- L11 Transportation Management, Roads - Obliterated
- L12 Trail Management - Restricted Use
- L13 Trail Management - Restricted Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Restrict management activities that disturb deer from about November 1 to May 1 Acquire private land if the opportunity arises

VII. SPECIFIC MONITORING AND EVALUATION

Continue monitoring Peavine Creek

Monitor effectiveness of annual permittee plan for cattle grazing and the effectiveness of wildlife habitat improvements

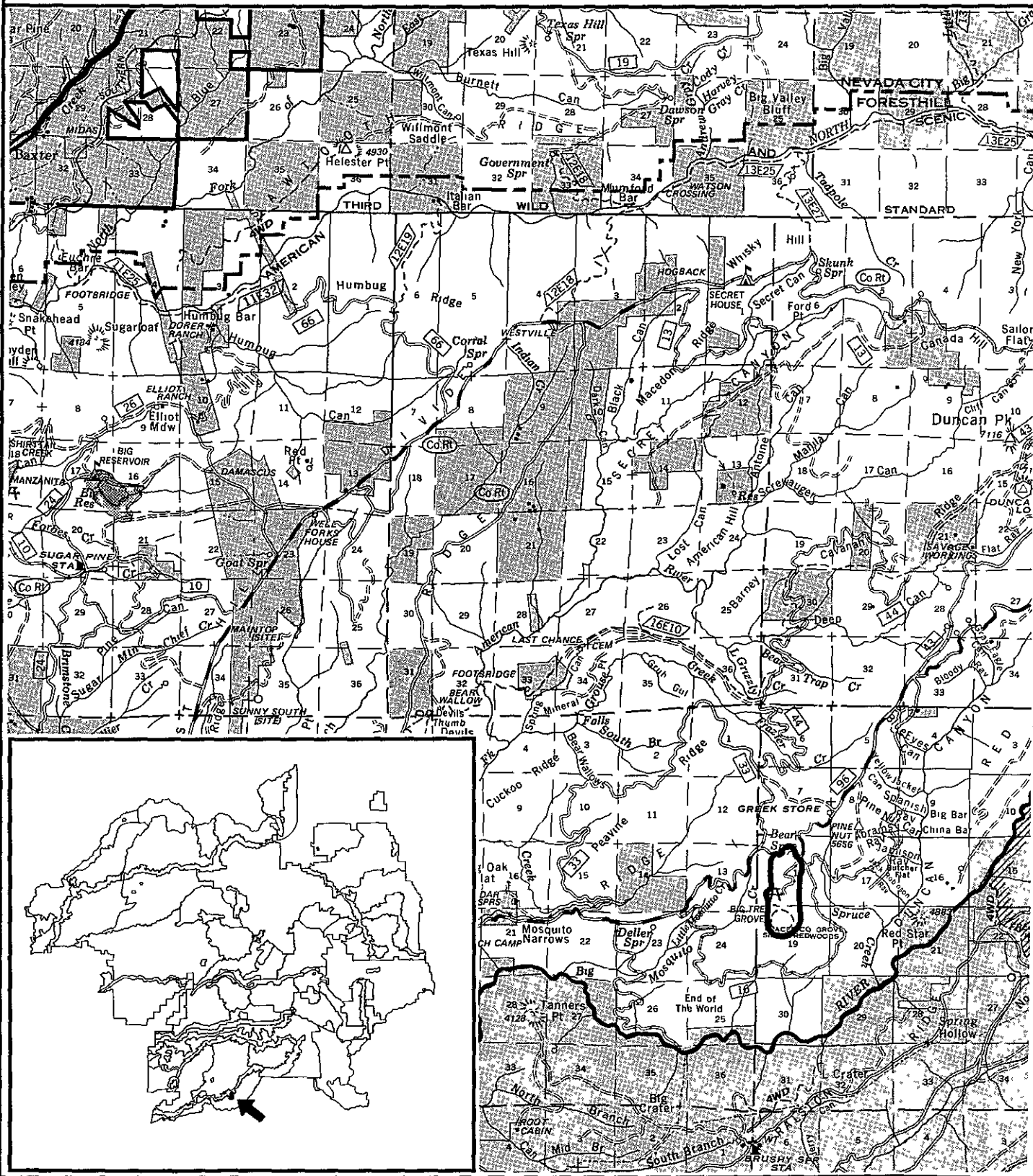
1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines

2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 107

BIG TREE

T14N, R13E



107 BIG TREE

346 GROSS ACRES

346 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 22 miles east of Foresthill on the Mosquito Ridge Road. It contains the 160-acre Placer County Big Tree Redwood Grove. This redwood grove contains the northernmost naturally occurring giant sequoias in the range of this species. The sequoias cover only a few acres. The grove consists of six mature giant sequoia trees, a National Recreation trail, and picnic facilities. Elevation ranges from 5,000 to 5,600 feet. The topography is broken by several drainages tributary to Mosquito Creek.

This MA is classified as the Placer County Big Tree botanic area (SIA).

The grove is in a near-natural condition. A small grove of giant sequoia of unknown genetic source was established in 1951 by the Auburn Lions Club. The Mosquito Ridge Cattle Allotment is within this MA. There are no wetlands. There are 269 acres of unsuitable productive forest land.

A portion of spotted owl habitat area W-1 lies within this MA.

There are no selected emphasis species.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

The management strategy for the 160-acre grove has been a debated issue. In 1949 it was designated as a recreation area by the Regional Forester under Regulation U-3b. In 1977, a proposal was made to change the designation to a botanical area under 36 CFR 294.1(a). In 1978, Dr. William Libby, from the University of California, expressed an interest in preserving the unique gene pool of the grove. The planted sequoias are of particular interest to the Auburn Lions Club because they were planted as a memorial. When these trees mature the natural strain will be compromised.

There is also a concern for the regeneration of the natural strain of giant sequoias in the short term because natural regeneration is not occurring and because the small grove could be lost in a single catastrophic event.

III. RESOURCE MANAGEMENT EMPHASIS

Manage the MA to protect the botanic features. Through procedures outlined in FSM 2361 and pursuant to 36 CFR 294.1(a), complete an Implementation Plan including the identification of exact boundaries.

The 160-acre area is unsuited for timber management, although timber practices may be required for botanical purposes. The area surrounding the 160-acre portion is suited for regulated timber management.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A. Recreation Opportunity Spectrum - Rodeo natural
- B. Visual Quality Objective - Retention in the grove, for the area adjacent to the access road #16-48, and for the area adjacent to the perimeter of the designated 160-acre parcel. Partial retention for the picnic area and the remainder of the area.
- C. Transportation Management Policy - Open
- D. Off-Highway Vehicle Restrictions - Closed
- E. Forestwide Standards and Guidelines - All apply
- F. Other - A15 Develop a plan for management according to Botanical Area objectives

V. AVAILABLE MANAGEMENT PRACTICES 21

- A1 Nordic Cross-Country Skiing
- A6 Closed OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation
- A13 Development or Rehabilitation of Private & Other Public Recreation Facilities
- A15 Special Interest Area Investigations and Management

- C6 Midsuccession Vegetation Management
- C7 Late Seral Growth Vegetation Management

- D2 Range Management - Permanent Range Type (Extensive Management)
- D5 Range Management - Transitory Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method
- E7 Special Cutting
- E8 Uneven Age Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatables
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasables
- G4 Minerals Management - Leasable Withdrawals

- J1 Land Adjustments - Retain and Acquire

- L1 Timber Access Road Development - Road Construction/Reconstruction
- L2 Multiresource Road Access Development. Road Construction/Reconstruction
- L3 Trail Construction/Reconstruction - Foot Traffic Only
- L6 Trail Construction/Reconstruction - Special Uses
- L8 Translocation of Roads - Open
- L12 Transportation of Trails - Open

- P1 Fire Protection - Visual, High Use. Reservoirs, Improvements

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

This MA has been classified as the Placer County Big Tree Grove Botanic Area pursuant to Title 36 CFR 294.1(a) and the authority vested in the Regional Forester by the Chief, Forest Service

Remove the introduced sequoia stock to prevent interference with the natural gene pool.

Continue to maintain a progeny bank in order to maintain the local strain in the short term. Also consider reproducing site conditions necessary for natural and/or artificial regeneration within the grove

Develop a spotted owl management plan for SOHA W-1

VII. SPECIFIC MONITORING AND EVALUATION

Monitor for research purposes

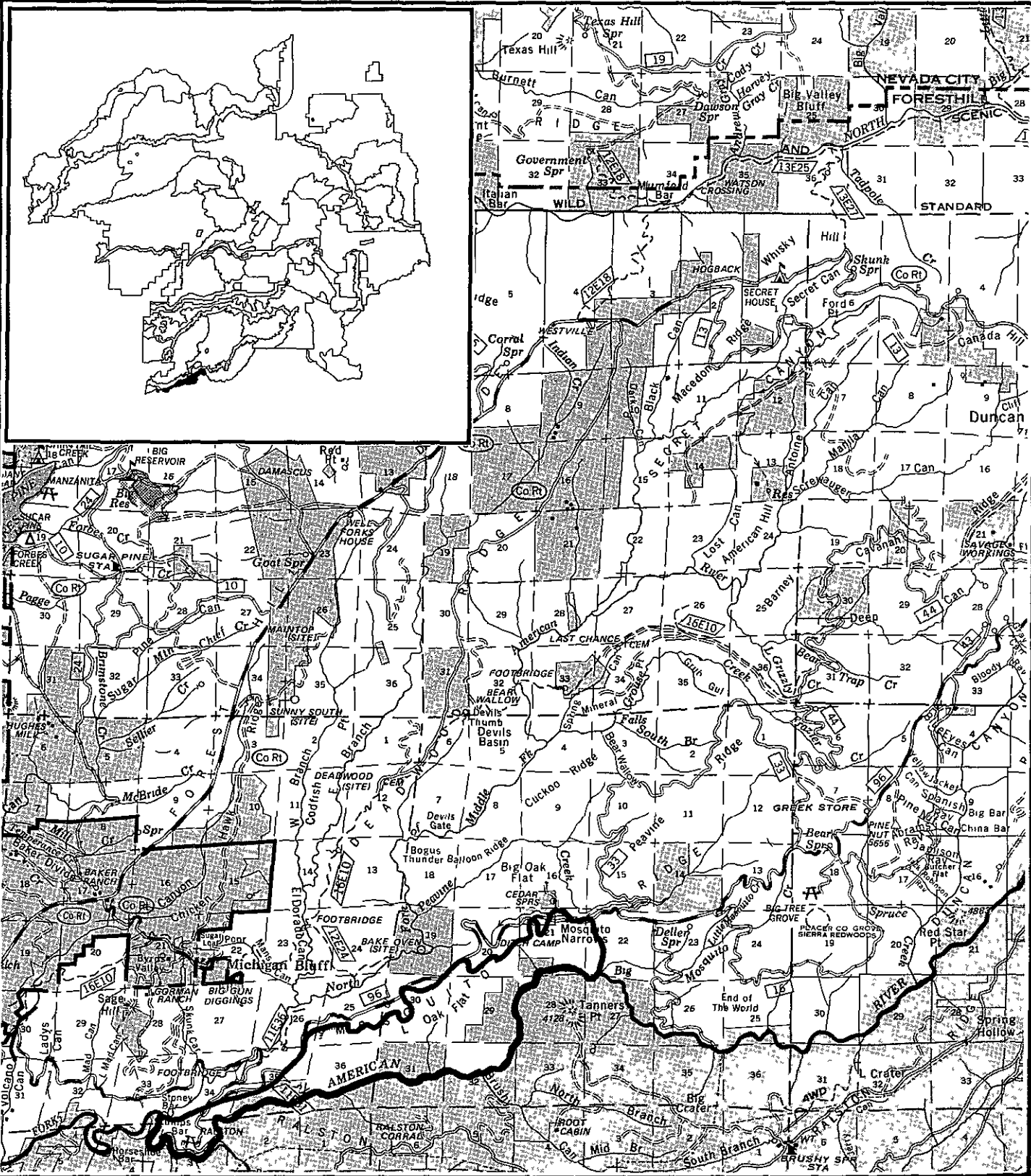
Monitor recreation use to determine disturbance to individual sequoias that comprise the grove

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.

MANAGEMENT AREA 108

LITTLE OAK

T14N, R12E



108 LITTLE OAK

3,097 GROSS ACRES

2,266 NFS ACRES

I. DESCRIPTION

This management area (MA) is encompassed by the Middle Fork American River on the south, Mosquito Ridge on the north, and Mosquito Narrows on the east. The area includes Little Oak Flat, the lower portion of Mosquito Ridge, and the Middle Fork American River. The elevation ranges from 1,600 feet at the Middle Fork American River to 4,000 feet on top of Mosquito Ridge. The area is characterized by moderate to steep slopes, with a predominant south aspect.

The MA contains an old firebreak on top of Mosquito Ridge, a telephone line under special-use permit, the Mosquito Ridge Trail, Ralston picnic area, Oxbow Powerhouse, and Ralston Afterbay (Oxbow Reservoir). Less than 50 percent of the area is accessible. A road exists along the top of Mosquito Ridge, and another accesses the picnic site, powerhouse, and reservoir.

The principal launch site for whitewater rafting on the Middle Fork is located below Ralston Afterbay Dam. White water rafting is administered by State Parks as part of the Auburn Recreation area, though the put-in point is on National Forest System land.

The vegetation consists of mixed conifer stands interspersed with large black oaks, and predominant black oak stands. The steep slopes are characterized by mixed brush, hardwood stands, and scattered conifers. There are 30 acres of wetlands. There are 625 acres of unsuitable productive forest land.

The area is largely key winter range for the Blue Canyon Deer Herd. A deer herd plan, which provides coordination of forest activities and herd management, has been developed with the California Department of Fish and Game.

The selected emphasis species are deer, and the riparian and hardwood groups.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There are disturbances to the deer herd during critical life cycle periods (November 1 - May 1). Management activities and vehicular use can intensify stress of the animals.

A concern is with the fire hazard present on the steep, brushy, inaccessible slopes.

There are opportunities for producing fuelwood while improving the winter deer range and managing hardwoods for wildlife habitat. The primary opportunity is the development of habitat for deer and other indicator species.

III. RESOURCE MANAGEMENT EMPHASIS

The resource management emphasis is to intensively manage wildlife habitat for indicator species. Regulated timber management will be coordinated to meet wildlife habitat requirements using short rotation age management. Use of uneven-aged management is a timber management option if stand conditions are suitable. There will be a special emphasis on recreation adjacent to Ralston Afterbay. The steep, brushy, inaccessible slopes are unsuitable for timber management.

The desired future condition is 40 percent of the area in cover and 60 percent in forage areas of proper size and arrangement for deer. The vegetation on land with less than 30 percent slope will consist of predominantly conifer stands or predominantly black oak stands. On slopes between 30 and 50 percent suitable for timber management, the vegetation will consist of predominantly conifer stands. Slopes (50+ percent) unsuitable for timber management will consist of a mosaic of brush (primarily preferred browse species), hardwoods (primarily black oak), and conifers; and a mixture of the three. The glade on top of Mosquito Ridge and the vegetation in the recreation area will be maintained in herbaceous ground cover.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roaded natural and semi-primitive motorized in the Middle Fork of the American River Canyon
- B Visual Quality Objective - Partial retention for foreground as viewed from Ralston Recreation Site and Oxbow Reservoir and retention for the semi-primitive nonmotorized area. Modification for remainder of area. Maximum modification will be allowed on a case-by-case basis in areas that have a modification or maximum modification initial VQO and have been assigned the modification VQO
- C Transportation Management Policy - Regulated seasonal road closure. On key winter deer range, access will be regulated to protect deer
- D Off-Highway Vehicle Restrictions - Designated routes only in summer. On key winter deer range, closed November 1 to May 1

This restriction can be amended if weather conditions are such that deer are not on the winter range
- E Forestwide Standards and Guidelines - All apply

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A5 Restricted OHV
- A6 Closed OHV
- A8 Developed Recreation & Interpretive Service Sites Management, Public Sector
- A9 Recreation Management (Private & Other Public Sector)
- A11 Recreation or IS Site Construction or Rehabilitation

- C5 Early Succession Vegetation Management
- C6 Midsuccession Vegetation Management
- C7 Late Seral Growth Vegetation Management
- C8 Structural Habitat Improvement and Maintenance
- C9 Wet Meadow Habitat Improvement and Maintenance

- E1 Clearcut Cutting Method
- E2 Seed Step Cutting Method
- E3 Overstory Removal Cutting Method
- E4 Intermediate Cutting - Existing Stands
- E5 Commercial Thinning - Regenerated Stands
- E6 Seed Tree Cutting Method-
- E7 Special Cutting
- E8 Uneven Age Cutting Method
- E10 Artificial Stand Reestablishment
- E11 Natural Stand Reestablishment
- E13 Release and Weeding
- E14 Precommercial Thinning

- G1 Minerals Management - Locatable
- G2 Minerals Management - Locatable Withdrawals
- G3 Minerals Management - Leasable
- G4 Minerals Management - Leasable Withdrawals
- G5 Minerals Management - Saleable

- J2 Land Adjustments - Limited

- L1 Timber Road Development - Construction/Reconstruction
- L2 Timber Road Access Development - Road Construction/Reconstruction
- L5 Trail Construction/Improvement - Foot, Equestrian, and Trail
- L8 Transportation Management, Trails - Open
- L9 Transportation Management, Trails - Regulated Use
- L10 Transportation Management, Trails - Closed
- L12 Transportation Management, Trails - Limited
- L13 Transportation Management, Trails - Restricted Use

- P1 Fire Protection - Continuous Fuels

VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Restrict management activities during the critical wildlife lifecycle period. Break up the continuity of fuels on the steep slopes, and emphasize fire prevention activities.

VII. SPECIFIC MONITORING AND EVALUATION

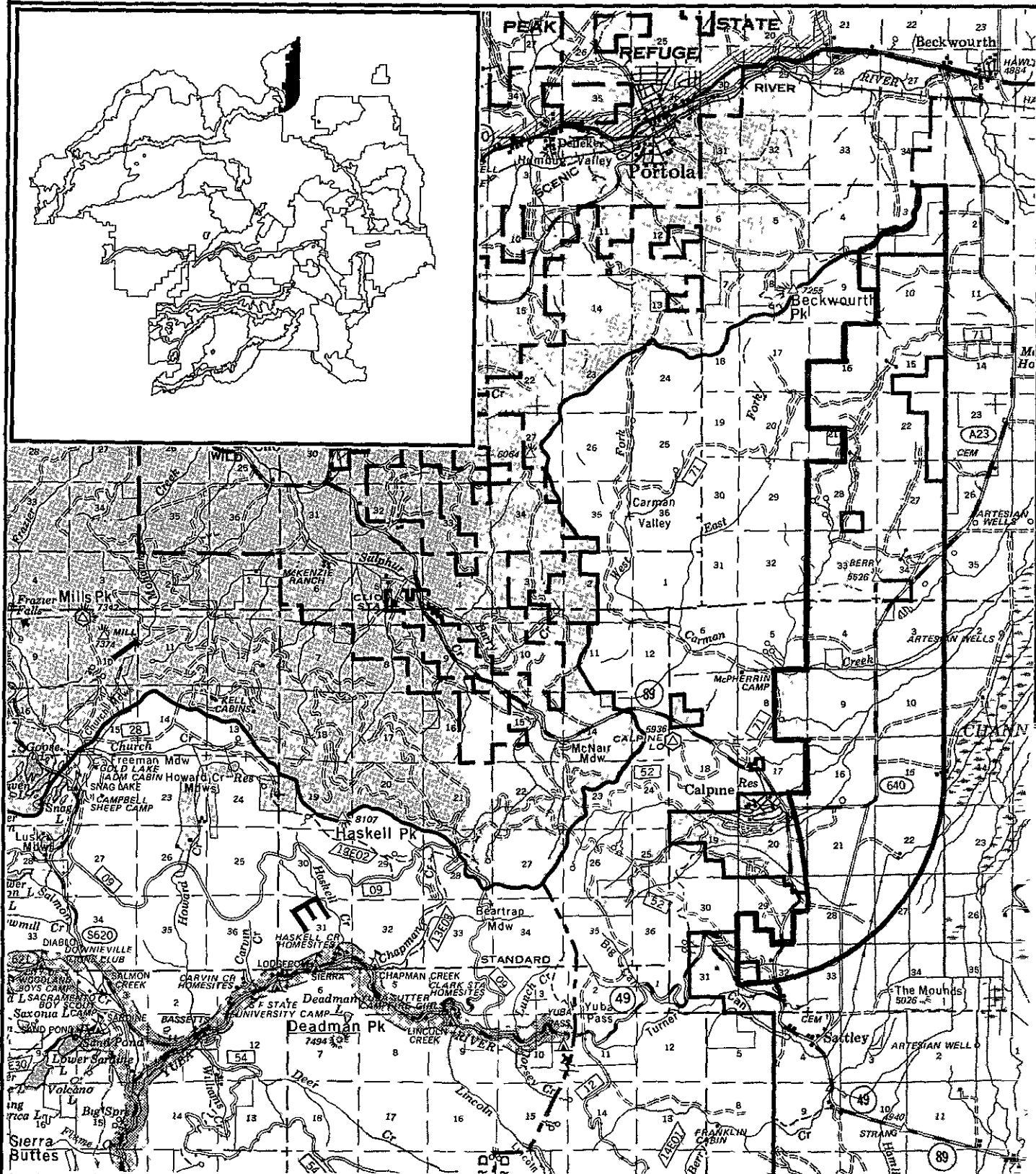
Monitor the effectiveness of wildlife habitat improvements and the effectiveness of restricted management activities on deer.

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V

MANAGEMENT AREA 109

BERRY

T21N, R14E



109 BERRY

1,768 GROSS ACRES

1,153 NFS ACRES

I. DESCRIPTION

This management area (MA) is located approximately 9 miles north of Sierraville. Elevations range from 4,950 feet to 7,200 feet with all aspects being represented. The area consists of small, isolated, well-roaded pieces of National Forest System land. No major timber sales have taken place since logging was done around the turn of the century. The timber type is primarily small sawlog-size eastside pine.

The area includes portions of the Beckwourth Sheep and Beckwourth Peak Cattle Allotments.

There are no selected emphasis species. Wetland acreage is minor. There are 723 acres of unsuitable productive forest land.

II. SUMMARY OF ISSUES, CONCERNS, AND OPPORTUNITIES

There is a concern over the difficulty in managing isolated pieces of National Forest System land.

There is the possibility of exchange for land within or contiguous to the Tahoe National Forest.

The Beckwourth Known Geothermal Resource Area (KGPA) has been jointly studied for geothermal leasing by the BLM and the Forest Service. The BLM revoked these lands on August 17, 1984.

III. RESOURCE MANAGEMENT EMPHASIS

The isolated land areas within this MA will be considered for exchange for other private lands within the Tahoe National Forest. Other uses of these exchange lands will not be considered until all possibilities for exchange have been evaluated. The area is considered unsuitable for timber management.

IV. MANAGEMENT AREA STANDARDS AND GUIDELINES 1/

- A Recreation Opportunity Spectrum - Roded natural.
- B Visual Quality Objective - Retention
- C Transportation Management Policy - Forestwide Standards and Guidelines apply.
- D Off-Highway Vehicle Restrictions - Designated routes only in summer. Open for over-the-snow use.
- E Forestwide Standards and Guidelines - All apply.

V. AVAILABLE MANAGEMENT PRACTICES 2/

- A1 Nordic Cross-Country Skiing
- A4 Open OHV
- A5 Restricted OHV
- D2 Range Management - Permanent Range Type (Extensive Management)
- D7 Range Improvement - Nonstructural (Permanent and Transitory)
- D8 Range Improvement - Structural (Permanent and Transitory)
- G1 Minerals Management - Locatables
- G3 Minerals Management - Leasables
- G5 Minerals Management - Saleables
- J3 Land Adjustments - Potential Exchange

- L8 Transportation Management, Roads - Open
- L9 Transportation Management, Roads - Regulated Use
- L10 Transportation Management, Roads - Disposal
- L11 Transportation Management, Roads - Disposal
- P1 Fire Protection - Continuous Fuels

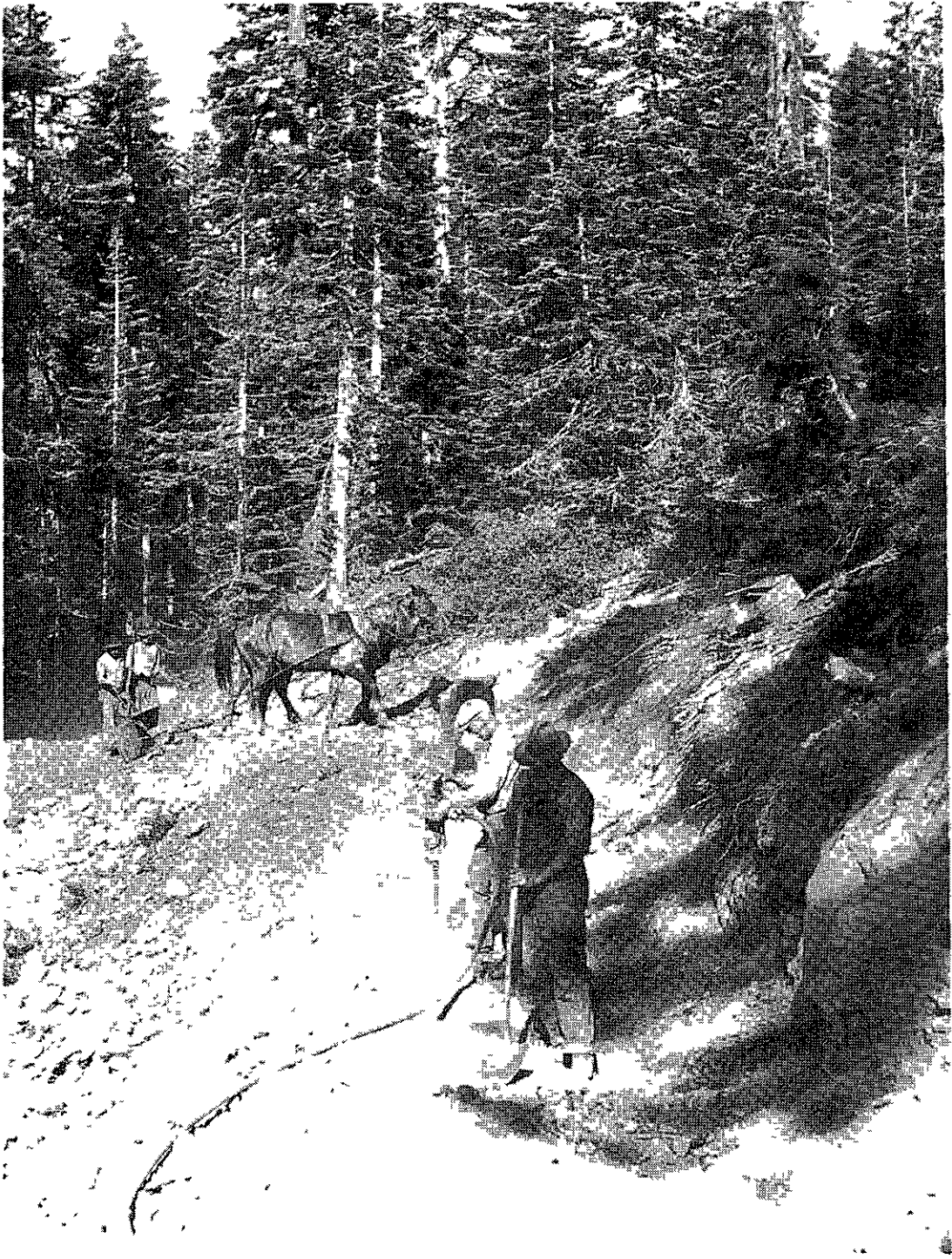
VI. PROPOSED RESOLUTION OF ISSUES AND CONCERNS

Study the possibility of exchanging parcels for other private land within the Tahoe National Forest. Other areas must be shown to be advantageous to the government.

VII. SPECIFIC MONITORING AND EVALUATION

None

- 1/ Refer to Resource Support Element Maps and Forestwide Standards and Guidelines
- 2/ Refer to complete Descriptions of Management Practices in Chapter V.



Constructing French Meadows Road, drilling and blasting, 1927

CHAPTER VI

MONITORING AND EVALUATION

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VI. MONITORING AND EVALUATION

Monitoring and evaluation are separate, sequential activities that help determine whether projects are meeting Forest plan direction. Monitoring is designed to observe and record both natural processes and management activities permitted in the Forest Plan. It tracks the overall progress made towards implementing the Plan, and determines whether the basic assumptions used to develop the Plan are accurate. The results of this monitoring are then evaluated to determine how effective the Forest Plan is and whether it needs to be changed through amendment or revision. This chapter describes monitoring and evaluation techniques, outlines the monitoring plan for the TNF, and explains the amendment and revision process.

MONITORING LEVELS

- There are three levels of monitoring, each of which asks different questions in reference to the Forest Plan:

1. Implementation Monitoring.

Is the Forest Plan being implemented as designed?

Is management direction being followed?

Are programmed practices and activities being implemented according to Plan direction?

2. Effectiveness Monitoring.

How well is the Plan being implemented?

Are planning output levels being achieved?

Are environmental quality standards being achieved?

Is management direction achieving the desired results?

3. Validation Monitoring.

Were the assumptions, initial data, and coefficients used to develop the Plan accurate?

Was accurate resource information used to project the outputs and impacts of management?

Were the estimated costs and benefits used in the analysis and development of the Forest Plan accurate?

Are budget levels adequate to achieve the projected management intensity?

Are the standards and guidelines adequate? Are they realistic?

Is there a better way to meet Forest planning goals, policies, and objectives?

Is new information needed for Forest Plan revision?

The three levels of monitoring are in sequence **Implementation** monitoring should be conducted first to determine whether practices and activities are complying with the Forest Plan. Effectiveness monitoring should follow implementation monitoring. Finally, validation monitoring should be conducted only if effectiveness monitoring shows that basic assumptions or coefficients are questionable. This sequence is important; needless expense or confusion may be caused by going directly to effectiveness or validation monitoring without first determining if management direction is being implemented.

MONITORING REQUIREMENTS

NFMA requires that, at a minimum, the following be covered by a monitoring plan. The guidance provided in 36 CFR Part 219 requires monitoring to:

1. Compare planned versus applied management standards and guidelines to determine if objectives are achieved.
2. Quantitatively compare planned versus actual outputs and services.
3. Measure effects of prescriptions, including significant changes in land productivity.
4. Determine planned cost versus actual costs associated with carrying out prescriptions.
5. Determine population trends of the management indicator species and relationship to habitat changes.
6. Evaluate effects of National Forest management on adjacent land, resources, and communities.
7. Identify research needs to support or improve National Forest management
8. Determine if lands are adequately restocked.
9. Determine, at least every ten years, if lands identified as unsuitable for timber production have become suitable.
10. Determine whether maximum size limits for harvest areas should be continued.
11. Ensure that destructive insects and disease organisms do not increase to potentially damaging levels following management activities.

MONITORING PLAN

Resource management practices, activities, and effects to be monitored are displayed in Table VI.1. Data sources, the reliability of the data, and the frequency of monitoring are also shown for each monitoring activity, practice, or effect. The information presented in Table VI.1 is the monitoring plan for the TNF Forest Plan.

The information contained in the table is explained below:

Column Number	Component Name	Description
1	Activity, Practice, or Effect to be Measured	The specific items that respond to either NFMA, FSM 1920, Forest Plan direction, or subsequent project needs. This activity, practice, or effect is a specific statement of what will be monitored. These items allow the TNF to evaluate the consequences of the Forest's actions and outputs; e.g., measure soil and vegetation trends for range by measuring vegetative composition, density, and vigor.
2	Monitoring Objective	A specific statement of what will be monitored (activity, effect, or practice) and what is intended to be accomplished; e.g., ensure a practice or activity meets a TNF output objective (key target) or evaluate consequences predicted in the EIS and Forest Plan. The objective might be simply to verify whether or not a standard was applied. A more complex objective, for the range example, might be to maintain or manage range conditions
3	Monitoring Techniques	The description of the specific sampling or inventory techniques and the sources of information to be used e.g., management attainment reports or environmental assessment reviews. For range, monitoring techniques might include paced transects with photo interpretation.
4	Expected Precision/Reliability (validity)	Refers to the exactness or accuracy of the measurement technique and the expected probability that the information acquired through monitoring will reflect actual conditions. Both precision and reliability (validity) are qualitatively rated as either high, moderate, or low. Some components, such as key targets (MBF's or AUM's), which have a low bias and a definable precision, will have a high level of accuracy and high probability of reflecting actual conditions. Other components, such as range condition and trend, will have a reduced level of precision and reliability based on the monitoring techniques available. The accuracy limits for both precision and reliability are:

LEVEL OF PRECISION/VALIDITY	ACCURACY LIMITS
High	Maximum measurement of $\pm 10\%$ of the sample mean
Moderate	Maximum measurement of $\pm 33\%$ of the sample mean
Low	Maximum measurement of $\pm 50\%$ of the sample mean
N/A	Accuracy limits cannot be established

5	Minimum Monitoring Frequency	The minimum time frame or schedule during which the activity, practice, or effect is sampled. This schedule is stated annually or in portions of years; e.g., Range - ongoing.
6	Reporting Period	The frequency of recurring intervals between reports summarizing monitoring results for a specific activity, practice, or effect. Often this period is dependent on the timing of evaluation or attainment reports; e.g., the reporting period for range is 10 years (allotment plan life).
7	Standards	The tolerance limits or standards by which the activity, practice, or effect will be evaluated. For example, range standards may state that vegetation and soils will be maintained in fair condition with a stable to upward trend.
8	Responsibility for Monitoring	Identifies the individual responsible for each activity, practice, or effect. Integrated inventories will be emphasized. For example, range condition and trend monitoring will be accomplished by the TNF Range Conservationist. Monitoring may be accomplished while performing wildlife transects.
9	Variability from Standard Indicating Further Action	The criteria describing the tolerance limits or standards from which the activity, practice, or effect can vary from predicted performance. When these limits are exceeded, further evaluation and monitoring are initiated (see Figure VI.1). For example, if the monitoring indicates the range condition is fair with a downward trend, the process displayed in Figure VI.1 will be followed.
10	Average Annual Cost	This is the TNF's best estimate of the average annual monitoring costs based on the requirements for the first 5 years the Forest Plan will be in effect.

TABLE VI.1 MONITORING REQUIREMENTS

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
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A - RECREATION

Dispersed Recreation Use	Quantify Recreation Use	RIM data gathering	N/A	Yearly	RIM Use Report	PSM 2309 11	DR, Recreation Staff	Measurable increases or decreases from current use	\$ 1,500
Recreation Opportunity Spectrum	ROS classification	Recreation Inventory NFS lands	N/A	When Forest Plan revised	5 years	FS ROS Guidelines	Forest Recreation Officer	Any changes from current classification	\$ 500
	ROS classes being maintained	Project Planning	N/A	Each project	Variable	FS ROS Guidelines	DR	Any change from current classification	\$ 1,500
	Projected Use meeting expectations	RIM data gathering	N/A	Yearly		FS ROS Guidelines	DR, RIM Activity and use reporting	Significant difference between actual and projected use	\$ 1,000
Recreation Management Costs	Maintain cost efficiency	PAMARS/ADVENT Planning	N/A				Forest Recreation Staff	Any significant reduction in cost effectiveness	\$ 500
Wild River Management	Retain Wild River Natural and scenic character	Physical examination of Wild River area	N/A	Yearly	RIM Facility Condition Yearly	Federal Wild River Plan	District Recreation Techs	Any recognizable degradation	\$ 500

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
Public use in Research Natural Areas	Minimize conflicts with RNA activities	On-site inspection	N/A	Variable	Variable	RNA Management Plan	DR	Evidence of use affecting RNA activities	\$ 1,000
Cultural Resource Protection	Protect site from project impacts	On-site inspection	N/A	After Forest projects	Variable	FSM 2361	Forest CRM personnel	Any significant loss of integrity	\$ 5,000
Cultural Resource Protection	Maintain site integrity	on-site inspection	N/A	Every 10 years	Variable	FSM 2361	Forest CRM personnel	Any significant loss of integrity	\$ 5,000
Accuracy of EFFALT Predictions at Treasure Mountain	Maintain acceptable EFFALT	EA studies	Moderate	Variable	Variable	Forest Plan EFFALT guidelines	Line Offi- cer, Forest Landscape Architect	Any change from predicted EFFALT	\$ 1,000
Developed Recreation Site Condition	Identify need for maintenance or rehabilit- ation	Physical inspection of facilities	Moderate	During fee collection	Variable	RIM	District Recreation Staff	Significant decline in facility condition	None
Visual condition of Forest	Determine if VQO's are being met as per plan	Field reviews photo points	High	Yearly	Yearly	EVC and Forest Plan VQO's as defined in FSM 2380	Line Offi- cer through Forest Landscape Architect's technical evaluation	5% failure to achieve the planned VQO on a given project or viewed	\$ 2,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
Trend of visual character	Determine if desired character stated in plan is being approached or maintained	Field reviews with landscape control point method	High	5 years	5 years	Forest Plan and PSW-91 or 1973	Line Offi- cer through Forest Landscape Architect's technical evaluation	Indication of trend away from the stated goal	5 1,500
Visual resource improvement	Determine if an active program of visual resource improvement is being carried out	Field reviews and photo points	Moderate	Variable. depending on identified projects	Variable, depending on identified projects	Forest Plan Planning Records, Forest Plan VQO's & FSM 2380	Line Offi- cer through Forest Landscape Architect's technical evaluation	Less than 50% accomplishment of visual resource improvement projects in any year	5 500
B - WILDERNESS									
Wilderness Area Carrying Capacity	Determine appropriate level of use	Inspect trails and dispersed camping areas	Moderate	Yearly	Capacity set in wilderness implementa- tion plan Use levels reported yearly	Wilderness District Management Plan Staff	Overuse causing reduction in wilderness values		5 2,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EXPECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
C - FISH AND WILDLIFE - See also Appendix D									
1 Standards and Guides	Verify Compliance	Field Reviews	Moderate	Annual	Annual	Compliance	District Biologists	10% sites not in compliance	\$10,000 per year
2 Species Monitoring (Level 1 Punding)	Peregrine Falcon	Nest Site surveys	Moderate	1 1 X 5, 1 3 Years	1 1 X 5, 1 3 Years	Population Trends	District Biologists	Abandoned nests	\$ 500
	Lahontan Cutthroat	stream Surveys	Moderate	1 3 years	1 3 Years	Habitat Prescript	Forest Fishery Biologist	Non-compliance with prescription	\$ 1,000
	Spotted Owl	RD&A Survey Protocols	Moderate	1 1 X 5, 1 3 Years	1 1 x 5, 1 3 Year	Population Trends	Forest Wildlife Biologist	Abandoned SOHA's	\$ 5,000
	Willow Flycatcher	Mgmt Site surveys	Moderate	10% Mgmt Sites/Year	Annual	Habitat Prescript	Forest Wildlife Biologist	20% don't meet prescription	\$ 2,500
	Goshawk	Mgmt Site surveys	Moderate	10% Mgmt Sites/Year	Annual	Habitat Prescript	Forest Wildlife Biologist	20% don't meet prescription	\$ 2,500
3 Habitat Monitoring (Level 1)	Riparian	Habitat surveys	Moderate	1 3 Years (1st Year)	1 3 Years (1st Yr)	Habitat Prescript	Forest Wildlife Biologist	10% don't meet prescription	510,000
	Old-Growth	Habitat Surveys	Moderate	1 3 Years (2nd Year)	1 3 Years (2nd Yr)	Habitat Prescript	Forest Wildlife Biologist	10% don't meet Prescription	\$10,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
1 Species Monitoring (Level 2 Funding)	Bald Eagle	USFWS surveys	Moderate	Annual	Annual	Population Trends	District biologists	Per USFWS Direction	\$ 500
	Great Gray Owl	Mgmt Surveys	Moderate	1 1 X 5, 1 3 years	1 1 X 5, 1 3 Years	Site Occupancy	Forest Wildlife Biologist	Abandonment of Active Sites	5 2,000
	Deer	DFG Survey Data	Moderate	Annual	Annual	Population Trends	Forest Wildlife Biologist	Input from Department of Fish & Game (DFG)	\$ 500
	Black Bear	DFG Survey Data	Moderate	Annual	Annual	Habitat Prescript	Forest Wildlife Biologist	Input from the DFG	\$ 200
	All Trout Species	Coop stream surveys	Moderate	1 1 X 5, 1 3 Years	1 1 X 5, 1 3 Years	Habitat Prescript	Forest Fishery Biologist	10% don't meet Prescription	510.000
2 Habitat Monitoring (Level 2)	Hardwoods	Habitat surveys	Moderate	1 3 Years (1st Year)	1 3 Years (1st Yr)	Habitat Prescript	Forest Wildlife Biologist	10% don't meet Prescription	510,000
	Mountain Meadow	Habitat surveys	Moderate	1 3 Years (2nd Year)	1 3 Years (2nd Yr)	Habitat Prescript	Forest Wildlife Biologist	10% don't meet Prescription	510.000
	Eastside Pine	Habitat surveys	Moderate	1 3 Years (3rd Year)	1 3 Years (3rd Yr)	Habitat Prescript	Forest Wildlife Biologist	10% don't meet Prescription	\$10,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
1 Species Monitoring (Level 3 Funding)	Kokanee Salmon	Coop Surveys	Moderate	1 5 Yr	1 5 Yr	Population Trends	Forest Fishery	Per coop Input w/ DFG Biologist	\$ 5,000
	Bass Species	Mgmt Site Surveys	Moderate	1 5 Yr	1 5 Yr	Population Trends	Forest Fishery Biologist	Per Coop Input From DFC	\$10,000
	Osprey	Nest Site Surveys	Moderate	Annual	Annual	Nest Site Use	Forest Wildlife Biologist	Non-use at any Active Site	\$ 1,000
	Sharp- Shinned Hawk	Mgmt Site Surveys	Moderate	10% Sites Per Year	Annual	Habitat Prescript	Forest Wildlife Biologist	20% don't meet Prescription	\$ 3,000
	Pileated Woodpecker	Mgmt Site Surveys	Moderate	10% Sites Per Year	Annual	Habitat Prescript	Forest Wildlife Biologist	20% don't meet Prescription	\$ 2,500
	§ Nevada Red Pox	Track Counts	LOW	Annual	Annual	Population Trends	Forest Wildlife Biologist	20% Decline for two years	\$ 5,000
	Wolverine	Track Counts	LOW	Annual	Annual	Population Trends	Forest Wildlife Biologist	20% decline for two years	\$ 5,000
	Gray Squirrel	Mgmt Site surveys	Moderate	5% Sites Per Year	Annual	Habitat Prescript	Forest Wildlife Biologist	20% don't meet Prescription	\$ 5,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
2 Habitat Monitoring (Level 3 Pending)	Wetlands	Habitat Surveys	Moderate	1 3 Years (1st Year)	1 3 Years (1st Yr)	Habitat Prescript	Forest Wildlife Biologist	1 doesn't meet Prescription	\$10,000
1 Species Monitoring (Level 4 Pending)	Golden Eagle	Nest Surveys	Moderate	Annual	Annual	Nest Site Use	Forest Wildlife Biologist	Non-use at an active Site	\$ 2,000
	Prairie Falcon	Mgmt Site surveys	Moderate	Annual	Annual	Nest Site Use	Forest Wildlife Biologist	Non-use at any active site	\$ 2,000
	Mountain Quail	Mgmt Site Surveys	Moderate	5% Sites Per Year	Annual	Nest Site Use	Forest Wildlife Biologist	20% don't meet prescription	\$ 5,000
	Blue Grouse	Mgmt Site Surveys	Moderate	10% Sites	Annual Per Year	Habitat Prescript	Forest Wildlife Biologist	20% don't meet prescription	\$ 3,000
	Band-tailed Pigeons	Mgmt Site Surveys	Moderate	5% Sites	Annual Per Year	Habitat Prescript	Forest Wildlife Biologist	20% don't meet prescription	\$ 5,000
	Turkeys	Mgmt Site Surveys	Moderate	10% Sites Per Year	Annual	Habitat Prescript	Forest Wildlife Biologist	20% don't meet prescription	\$ 2,000
	Chickarees	Mgmt Site Surveys	Moderate	5% Sites Per Year	Annual	Habitat Prescript	Forest Wildlife Biologist	20% don't meet prescription	\$ 3,000

TABLE VI 1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
	Bobcat	Track Counts	LO"	Annual	Annual	Population Trends	Forest Wildlife Biologist	20% decline for two years	\$ 5,000
	Mountain Lion	Track Counts	LOW	Annual	Annual	Population Trends	Forest Wildlife Biologist	20% decline for two years	5 5,000
D - RANGE									
Range Environ- mental Analysis	To utilize and maintain the range resource productivity	Range Field surveys	High	1-10 years	1-10 years	As identi- fied in the R5 Range Environ- mental Analysis Handbook and FSM 2210	Range conservat- ionist as required by Allot- ment range resource needs	Problem allotment and those allot- ments needing their manage- ment plans updated or revised	530,000
Range/Scattered Stocked Eastside Pine Stands	To determine what the Site potential of the scat- tered Stocked eastside pine stands is in relation to forage, timber firewood, or wood and forage (dual use) output	Range Field surveys	High	1-10 years	Annually	As identified in the R5 Range Environ- mental Analysis Handbook and PSM 2210	Range Conservat- ionist assisted by the Silvicult- urist and Soil Scientist	None	\$ 5,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
Allotment Administration and Permit Compliance	To ensure permittee compliance and evaluate the adequacy of current management	Field survey by allotment inspections readiness and utiliza- tion measurement	Moderate	1-3 years	Annually	As identified in the R5 Range Environ- mental Analysis Handbook and FSM 2230	District Personnel responsible for Range Management throughout the grazing season	Grazing Permit and Allotment Management Plan specifica- tions not being met	545.000
Range Improvements	To ensure improvements, facilitate the manage- ment of the range resource and are cost effective	Field surveys and benefit east analysis	Moderate	Annually	Annually 1-5 years	As Identified in FSM 2240 and PSH Structural and Non- structural range	District personnel responsible for range management throughout the grazing season	Specifications set forth in the Allotment Management plans and Annual Operating Plans	\$15,000

TABLE VI 1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
Range Condition and Trend	To determine range ecologi- cal Condition & trend and to develop the al- lotment plan- ning process that will achieve and/or maintain satis- factory range condition	Permanent and paced transects	Moderate	2-5 years	5 years	Vegetation and soils will be maintained or improv- ed from present condition with a static or Upward trend	District personnel responsible management	The condition and trend of the soil and vegetation has a declining condition and a downward trend caused by management activities	\$ 5,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
E - TIMBER									
Land Suitability for Timber Production	Determine if lands classed as not suited for timber production are suited and vice versa	Project evaluations, management reviews	High	Annually for projects examined & at least every 10 yrs for all lands	Annually	Plan Appendix I	Timber Management Officer	5% of current suited landbase (26,700 acres)	Included in all project costs
Size of Harvest openings	Ensure opening size meets Regional standard and guidelines	Timber Sale environmental analysis reviews, management reviews	High	Every project	Annually	40 acre maximum. see R5 standard for exemptions	District Rangers & TMO	None	Included in project cost

TABLE VI.1 MONITORING REQUIREMENTS (CONT)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED	MONITORING OBJECTIVE	MONITORING TECHNIQUES	EXPECTED PRECISION AND/OR RELIABILITY	MINIMUM MONITORING FREQUENCY	REPORTING PERIOD	STANDARDS	RESPONSIBLE STAFF	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION	AVERAGE ANNUAL COST
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dispersion of Final Harvests	Ensure that spacing of harvest open- ings conforms to Regional standards and guidelines	Timber sale environmental analysis documents, management reviews	High	Each project	Annually	Evenage openings shall be surrounded by stands >5 acres except that open- ings may have 15% of periphery in common with other openings	District Rangers & TMO	None	Included r** project cost
Annual Sale Quantity and Acreage	Ensure consistency of the timber sale program with the Forest Plan	Timber sale Environmental analysis documents. STARS reports	High	Annually	Annually	See Plan Appendix J Section III Timber Management Controls	TMO	See Plan Appendix J , Section III , Timber Management Controls	\$5.000
Timber Stand Re-establishment	Determination of success of regeneration practices	Described in FSM 2470 and silvicultural practices handbook	High	1st and 3rd growing season after reforestation and maintained until certified as established	Annually	See Regional standard and silvicul- tural practices handbook	District Rangers & Forest TMO	A trend in either mortality or growth that indicates minimum standards will not be met at some future time	\$22,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
Timber Stand Improvement	Ensure appropriate TSI measures are taken to meet growth and yield objectives	Management reviews, accomplish- ment reports	Moderate	Annually	Annually	See PSH on silvicult- ural practices	Forest TMO	A trend in either mortality or growth, that indicates minimum standards will not be met at some future time	\$22,000
Reforestation and Timber Stand Improve- ments Document- ation	Maintain accurate record of accomplish- ments for silviculture and management attainment reports	Use of stand activity cards	High	Annually	Annually	Described in SAR and MAR reports	TMO	N/A	\$ 5.000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
PEST MANAGEMENT									
Forest Pest Damage	Early detection, evaluation , and treatment of pest related problems and damage	Aerial and ground surveys, surveil- lance , stand and resource examina- tions and other resource monitoring effects.	Moderate	Annually when needed	Annually	Insect & Disease and other pest- related damage and mortality is main- tained at levels that do not inter- fere With the attainment of manage- ment goals and ob- jectives	DRs, Forest TMO, & RO-PPM Staff	When mortality or damage levels appear to interfere with or threaten the attainment of resource management objectives	\$ 5,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
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F - WATER

Water Quality (BMPs and water quality parameters and indicators)	To assess compliance with BMP direction, and to con- tinue to evaluate the effectiveness of BMP's	1 Review prepared environmental analysis documents, and contract provisions 2 Field activity reviews 3 water quality sample analyses (chemical and physical) 4 Macro- invertebrate analyses 5 Visual observations of BMP Imp- lementation	High	1 Ongoing as part of environmental analysis and contract review pro- cess. and as field activ- ity reviews occur Annual activity review analysis as specified in project plans 2 Monitoring frequency for water quality macro Invert- ebrates. fish populations, & visual BMP observation will vary depending on monitoring intensity	Annual	1 Meet State and Federal water quality Objectives 2 No sig- nificant affects on macro- inverte- brate and fish popula- tions 3 BMP's properly implemen- ted 4 Forest S&Gs prop- erly imple- mented 5 BMPs properly identified in project mitiga- tion	Resource Officer. Forest Hydrologist District Hydrologist	1 Failure to meet State and Federal water quality objectives 2 Downward diversity and numbers of macro- invertebrates and fish populations 3 Failure to implement BMPs on the ground 4 BMPs are not being included in implementing documents	\$28,000 (0 6 person years plus operat- ing costs)
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TABLE VI 1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
Water Quality Parameters and Indicators	Periodic Monitoring Of North Fork American Wild River to ensure no downward trend in quality (non-degradation policy) as per Mgmt & Development Plan for NF American Wild River	1 Water Quality sample analyses (chemical & physical) 2 Macro-invertebrate analyses 3 Fish population analyses 4 Bottom Sediment analyses	Moderate	Monitor every 3 to 5 yrs Seasonal monitoring of some parameters & one time evaluation of others during the year of monitoring	One report within six months following completion of monitoring year every 3-5 years	Establishes and meets more precise state and Federal water quality standards 2 No significant effects on macro-invertebrates, fish populations, and substrate	Forest Hydrologist	1 Failure to meet established State and Federal water quality standards 2 Downward diversity and numbers of macro-invertebrate and fish populations 3 Adverse changes in chemical/physical nature of substrate	\$13,000 per year once every 3-5 years (3 man years plus operating costs)
Acres of Restored Lar	Evaluate success Of restoration efforts (BMP) on declining watershed areas	Visual sampling and mapping of restoration efforts	Moderate	Seasonally Winter	Annual	Restoration measures are 75% successful At least 75% of treated areas are successfully restored	Forest Hydrologist	Failure to meet 75% success standards	\$ 1,500

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
G - MINERALS									
Plans of Operation	Monitor level of mining activity	MAR	LOW	semi- annually	Semi- annually	AS required in MAR direction	Forest Staff	N/A	Included in minerals budget
Mineral Withdrawals	Review Withdrawals	PLPMA Report	High	2 years, or as specified	Before 1995	Comply with PLPMA	DR, Forest & RO Staff. BCIS	N/A	\$ 4,000
Withdrawals	Amount of Land with- drawn or va- cated (re- leased from Withdrawals	Land Owner ship Mgmt System Reports	High	Annual	Annual	Forest Plan, Standards and Guidelines	Lands	None	\$ 100
3 - LANDS									
Land Uses	Improve administration of permits, licenses. and easements	Land Use Report (LUR)	High	Annual	Continuous	As specified in FSM 2790	Lands Staff	N/A	Included in SCP budget

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
J - LANDS (CONT)									
Property Boundaries	Effectiveness of LLL program	MAR	High	Semi- annually	Semi- annually	As required in MAR direction	Lands Staff N/A		Included in LLL budget
Lands Acquired by Land Adjustment Program	Effectiveness of exchange program	MAR	High	Semi- annually	Semi- annually	AS required in MAR direction	Lands Staff N/A		Included in land adjust- ment program
K - SOILS									
Effects of management activities on soil productivity	Evaluate implementation and effective- ness of S&G 55 in maintaining soil product- ivity	Transects. to measure soil density cover and organic matter, spot Checks	High/ moderate	Annual	Annual	Minimum amounts of soil cover porosity, and organic matter specified in S&G 55 and Appendix K	Forest Resource Officer	>15% of activity area does not meet standard soil loss	\$12,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
Off-Highway Vehicle Recreation Effect on Soil and other Resources	To monitor effect Of OHV activities on critical soil, wetlands, types Identif- ied in soil resource inven- tory & cultural resources	Field review (Visual)	Low/ moderate	Annually	September	As estab- lished in FSM 2355	Forest Res Officer Coordinated With Forest Recreation Officer and Forest Engineer	Unacceptable soil or other resource damage	5 2.000
Soil LOSS Under Key Range Allotments	Evaluate whether rate of soil loss exceeds rate of soil formation	Soil cover transects sediment traps, erosion troughs, photo points	Low/low	Annual	Annual	Minimum soil cover require- ments (to be . developed for each key allotment	Forest Resource Officer	>15% of activity area does not meet minimum soil cover requirements	\$ 1,000
Soil Resource Improvement Practices	Evaluate effectiveness of practices	Transects. to measure soil density. cover, and organic matter. spot Checks	High/ Moderate	Annual	Annual	Effect- iveness in meeting (or moving closer to) minimum require- ments in S&G 55 and Appendix K	Forest Resource Officer	Practice <85% effective	\$ 2,000

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY. PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
FACILITIES									
Road and Trail Management and Maintenance Program	To evaluate consistency effectiveness of road and trail maintenance and management to resource management objective and traffic needs	Field review Accident and Traffic Surveillance Reports		Annual	Annual	Level of assigned maintenance activities performed relevant to resource management and traffic needs Transportation management S&G's	Forest Engineer, DR, Forest Recreation Staff	Activities maintenance level and objective level do not coincide	\$ 3,000
Road Management and Stabilization program	Effectiveness of practices	Transects, erosion & bridges	LOW to moderate/moderate to high	Annual	Annual	Effectiveness of stabilization and drainage	Forest soil Scientist	<85% of samples show effective stabilization	5 1.600
Facilities Management	To evaluate facility maintenance and replacement needs	Field and office review		Every 2 years	Every 5 years	Ability of facilities to provide support necessary to manage resource program	Forest Engineer Admin Officer	Replacement and maintenance program adequate to provide necessary facilities for resource program	\$ 4.000 every 2 years

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
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P - PROTECTION

Wildfire Acreage	Compare actual burned acres with predicted burned acres	Fire reports	High	Annual	Annual leading to a 10-year average for Forest Plan review	FSH 510919 Analysis LEVEL II	Fire Management Staff	> 50% change within the 10-year period	5 1,000
Fuel Model Changes	Monitor and evaluate NFDRS-78 Fuel Model changes. compare With the predicted file	Visual, Timber Sale Accomplish- ment Reports, Tahoe LMP Planning	Moderate	Annual	Annual	None	Fire Management Staff	+ 33% change between actual and predicted	5 2,000
Activity Fuel Treatment With emphasis on meeting prescribed fire objectives	Monitor and evaluate actual activity fuel treat- ment acres and costs by treatment method accom- plished compared to objectives	MAR, Annual fuel treat- ment accom- plishment Report. Special cost Reports	High	Annual	Annual	FSM 5150 Tahoe NF Annual Goals & Objectives	Fire Management Staff	Any marked differences between actual and predicted objectives	5 3,000

TABLE VI 1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
Air Quality (Prescribed Fire program)	Monitor & evaluate compliance with Federal, State, and local regulations	Visual Per burn plan objectives, Ag-Burn Report to State Air Resources Board (ARB)	Moderate	Per project occur	AS projects FSM 5153 and quarterly	Local ARB Regs Staff Supp #55 11/75	Fire Management the smoke	Any marked variation from management plan that places smoke into smoke sensitive areas	5 5,000
Q - MULTI-RESOURCE									
Effects of Plan Implemen- tation in Resolving Public Issues	Determine to what extent plan direc- tion is resolving public issues	Communica- tion net- works, public meetings, workshops, interviews, etc	LOW	Continuous	Annual	Public issues should not become disruptive	Forest supervisor. District Ranger, staff (PIO) Coordinator	Unacceptabl results of general management reviews, functional reviews, etc	Included in appro- priate func- tional costs
Accomplishment of Objectives in Plan	Insure attainment	Attainment Reports	High	Continuous	Quarterly	Forest Plan Objectives	Forest Supervisor, District Ranger, Staff	Unacceptabl results of Management Team Review	Included in appro- priate func- tional costs

TABLE VI 1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
Actual Costs of Implementing Plan Compared to Projected Costs	Verify projected unit versus actual costs	PAMARS	High	Continuous	Monthly	Average annual budget projection by element	Forest Supervisor, District Ranger, Staff	+10% variation from projected costs	Included in appro- priate func- tional costs
Effects on Land Managed by Other Federal, State, local, or private individuals	Verify urban & community developments are improving other lands (Coordinated Resource Mgt Planning and High Sierra Resource Cons & Dev Area)	Reviews of coordinated projects and attending meetings	Moderate	Continuous	Quarterly	Resource conditions on other lands should increase	Forest Supervisor. District Ranger. Staff	Local resources on other than NPS lands should improve	Included in appro- priate func- tional costs

TABLE VI.1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
R - SENSITIVE PLANTS									
Sensitive Plants as identified in Current R5 Sensitive Plant List	Population changes	Botanical investiga- tions of sensitive plant sites in accord- ance with TNP Sensitive Plant Program Standards and Guidelines and R5 Suppl #33 to FSM 26334-5	Moderate	Periodi- cally or as proposed projects may threaten known habitat, coordinate with EA program	Annual	FSM 26334-16	Forest Resource staff Officer and Forest Botanist	To be deter- mined by the viability and the population needs Of the species on a case by case basis, plus additional costs for each proposal	\$ 2,400

TABLE VI 1 MONITORING REQUIREMENTS (CONT.)

ACTIVITY. PRACTICE OR EFFECT TO BE MEASURED (1)	MONITORING OBJECTIVE (2)	MONITORING TECHNIQUES (3)	EXPECTED PRECISION AND/OR RELIABILITY (4)	MINIMUM MONITORING FREQUENCY (5)	REPORTING • PERIOD (6)	STANDARDS (7)	RESPONSIBLE STAFF (8)	VARIABILITY FROM STANDARD INDICATING FURTHER ACTION (9)	AVERAGE ANNUAL COST (10)
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S - GEOLOGY

Extremely unstable land	Validate land instability mapping, when GRI complete	Environmental analysis and field review	Moderate	Variable depending on affected Forest projects	Yearly	Forest Plan mapped data and Risk Clas- sification System	Resource Officer	More than 33% of areas are misclassified	\$ 1,000
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Management activities on unstable lands	Ascertain effectiveness of S&G	Field <i>review</i>	Moderate	Annually	Yearly	Forestwide direction and predicted consequen- ces	Resource Officer	Less than 67% compliance with direction or more than 33% variation from predicted consequences	\$ 1,000
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T - UNEVEN-AGED MANAGEMENT

Implementation of uneven-aged management on 5 compartments	Determine ways to efficiently implement uneven-aged management	Environmental analysis and field design of projects	Moderate	Completion of environmental analysis and completion of project harvest	Completion of harvest	Forestwide S&G's with latest research from Blodgett Experi- mental Forest *	Timber management Officer	Any marked difference between pre- dicted & actual objectives	Included in appropriate funds
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The evaluation report will be Shared with the public

EVALUATION OF MONITORING RESULTS

Evaluation looks at the results of monitoring, determines how well those results meet Forest Plan direction, and identifies measures to keep the Plan viable. An example may help to illustrate the difference between monitoring and evaluation. A monitoring report will show whether the snag retention standard of 1.5 snags per acre has been met. Evaluation of this report will determine whether the 1.5 snags per acre actually produced what was expected in terms of wildlife populations and fire hazard. This follow-up evaluation provides a basis for changing the original standards, if necessary.

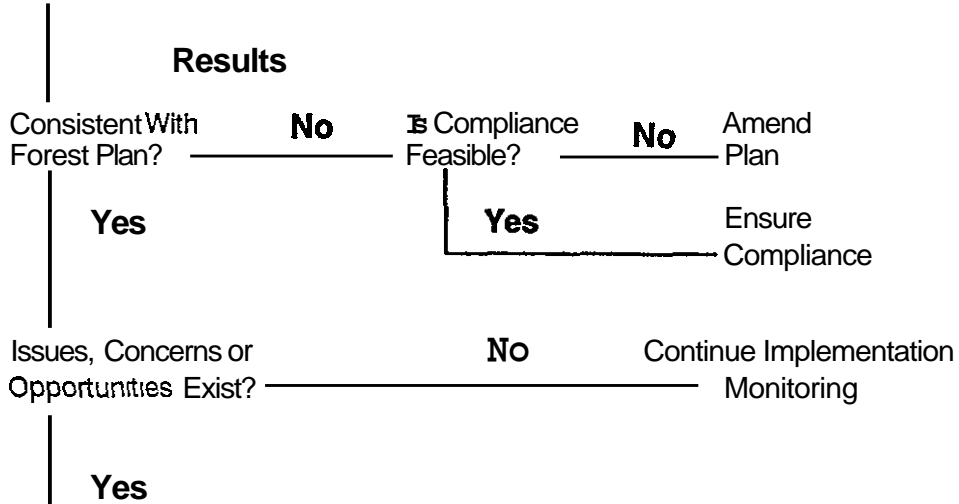
There are a full spectrum of techniques and methods for evaluation. They include, but are not limited to:

1. Site-specific observations by on-site resource specialists
2. Field assistance trips by other technical specialists.
3. General field observations by Forest Service officials
4. Ongoing accomplishment reporting processes such as PAMARS.
5. Formal management reviews on a scheduled basis
6. Discussions with other agencies and the public users
7. Management team review of monitoring results.
8. Interdisciplinary team reviews of monitoring results.
9. Involvement with existing research activities.
10. Review and analysis of records documenting monitoring results.

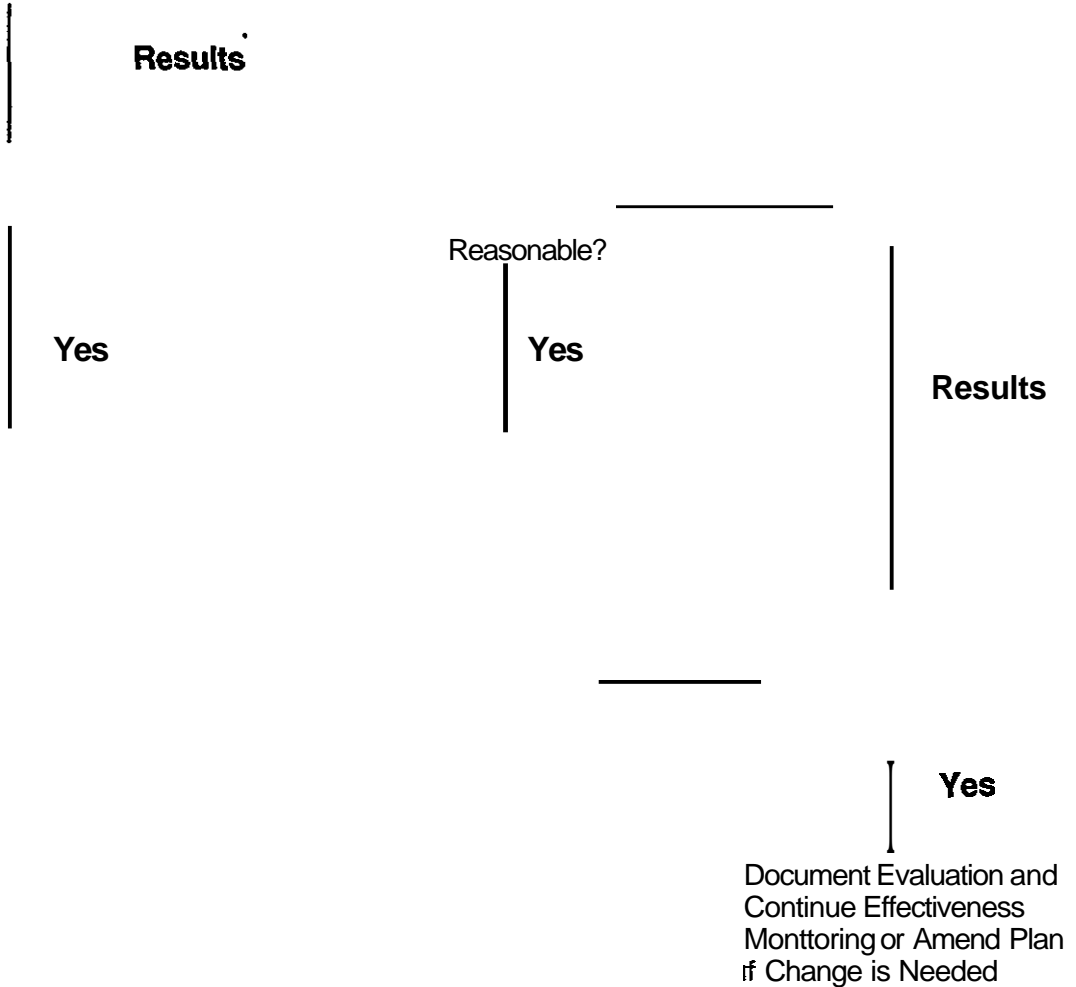
Based on the evaluation, any need for further action is recommended to the Forest Supervisor. Figure VI 1 summarizes the process for evaluating monitoring results from each monitoring level.

Figure VI.1: Evaluation of Monitoring Results for Forest Plan Implementation

IMPLEMENTATION MONITORING



EFFECTIVENESS MONITORING

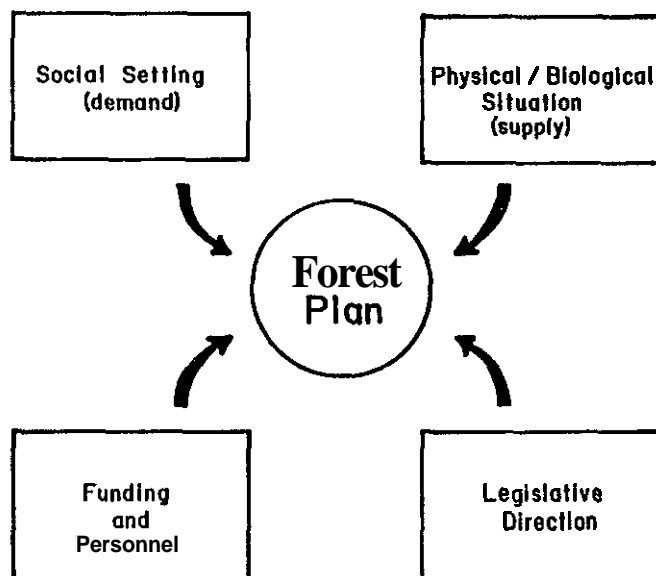


REVISIONS OR AMENDMENTS

NFMA requires that the Forest Plan be evaluated every 5 years to see if it is still applicable and appropriate. Monitoring is an ongoing effort, however, and monitoring reports discussing the status of the Plan must be completed yearly. These reports record changes made in the plan because of corrections in the data base, adjustments to management area boundaries, and changes in outputs because of funding or personnel ceilings (Full Time Equivalents or FTE's). The cumulative effect of these changes may or may not significantly affect the Forest's ability to produce the expected outputs. Depending upon the the extent of the changes, either a technical correction, a minor amendment, or a significant revision of the Forest Plan may be needed.

The following figure displays some of the important factors affecting the Forest Plan. A significant plus or minus change in any one or more of the factors could signal the need for the Plan to be reevaluated.

FIGURE VI 2 - IMPORTANT FACTORS AFFECTING A FOREST PLAN

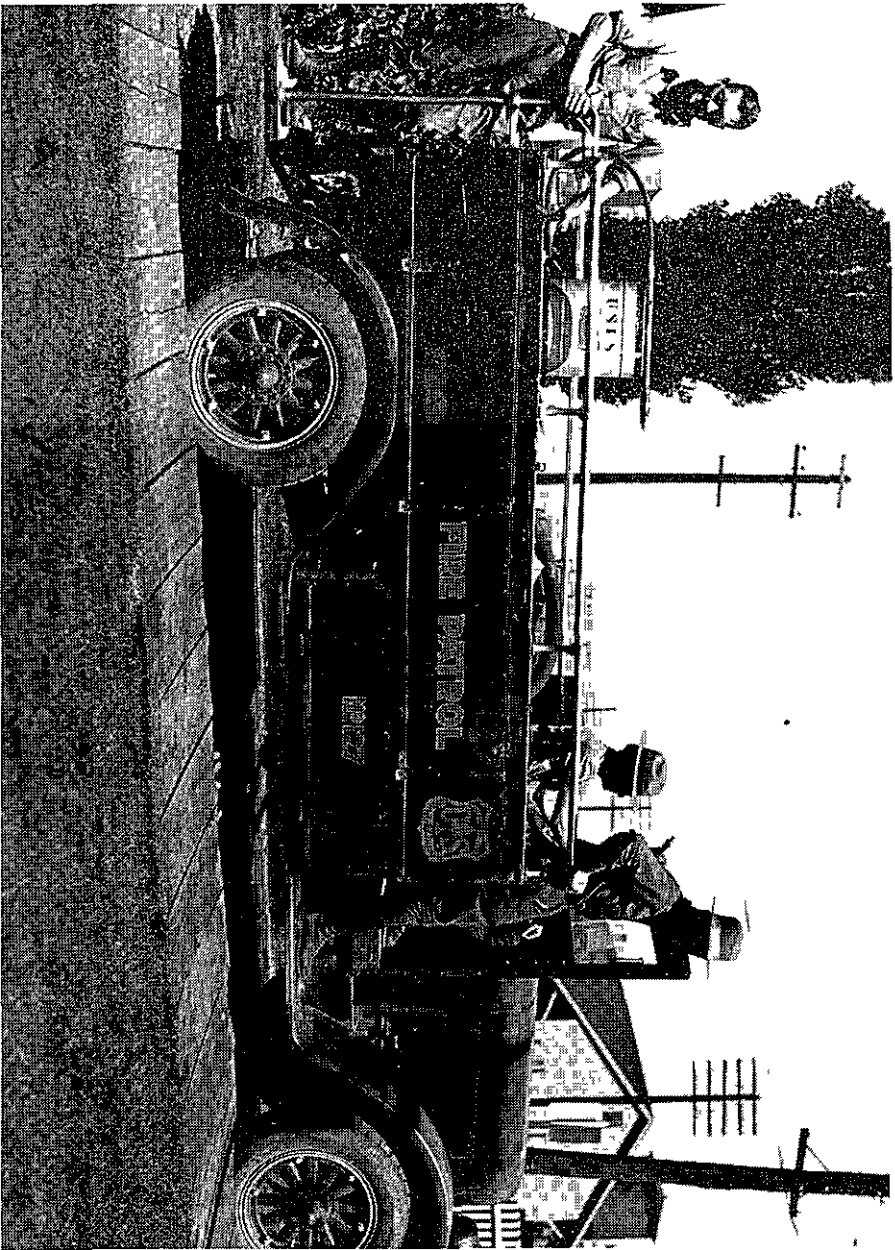


NFMA (219.10) defines amendments and revisions as follows:

'Amendment. The Forest Supervisor may amend the forest plan. Based on an analysis of the objectives, guidelines, and other contents of the forest plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the plan. If the change resulting from the proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of a forest plan. If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures.'

'**Revision** A forest plan shall ordinarily be revised on a 10-year cycle or ~~a~~ at least every 15 years. It also may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the plan have changed significantly or when changes in RPA policies, goals, or objectives would have a significant effect on forest level programs. In the monitoring and evaluation process, the interdisciplinary team may recommend a revision of the forest plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of a forest plan. The Forest Supervisor shall review the conditions on the land covered by the plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.'

In summary, an amendment is a change in part of the Plan which may or may not be determined to be significant according to NEPA (40 CFR 1508.27). A Plan revision is usually necessary when conditions or demands in the area covered by the Forest Plan have changed significantly, or when higher level direction significantly affects Forest programs. Revisions to the Forest Plan are not effective until all requirements are followed for development and approval of a Forest plan.



First fire truck at Truckee, 1932

VII. STATE AND PRIVATE FORESTRY

Forest Service activities cover three major areas: (1) National Forest administration, (2) State and private forestry, and (3) research. The previous six chapters provide the long-term direction for managing the National Forest System lands of the Tahoe. The purpose of this chapter is to identify the coordination necessary to involve State and private forestry. Research needs are identified in Appendix B.

The TNF alternate ownership pattern requires close coordination with local, State, other Federal agencies, and private landowners. Consequently, State and private forestry are an integral part of the everyday management of the TNF.

The direction for coordination with other landowners and agencies who have jurisdiction within the TNF is provided in Forestwide Standard and Guideline 54 - Coordination with Other Ownerships and Agencies - Coordinated Resource Management Planning. This standard and guideline states, 'Coordinate with other major landowners and agencies in programs and/or investments including, but not limited to, natural resources, energy and mineral resources, livestock production, watershed, wildlife habitat, wood production, and recreation. Specific resource plans may also include protection of plantations, integrated pest management, timber stand improvement, land line location, fuels treatment, and roads.'

Forestwide goal #5 (listed in Chapter V-LANDS section) relates to coordination and states, 'Emphasize coordination with other major landowners to use opportunities for mutual investments and programs to enhance protection or outputs from adjacent lands.'

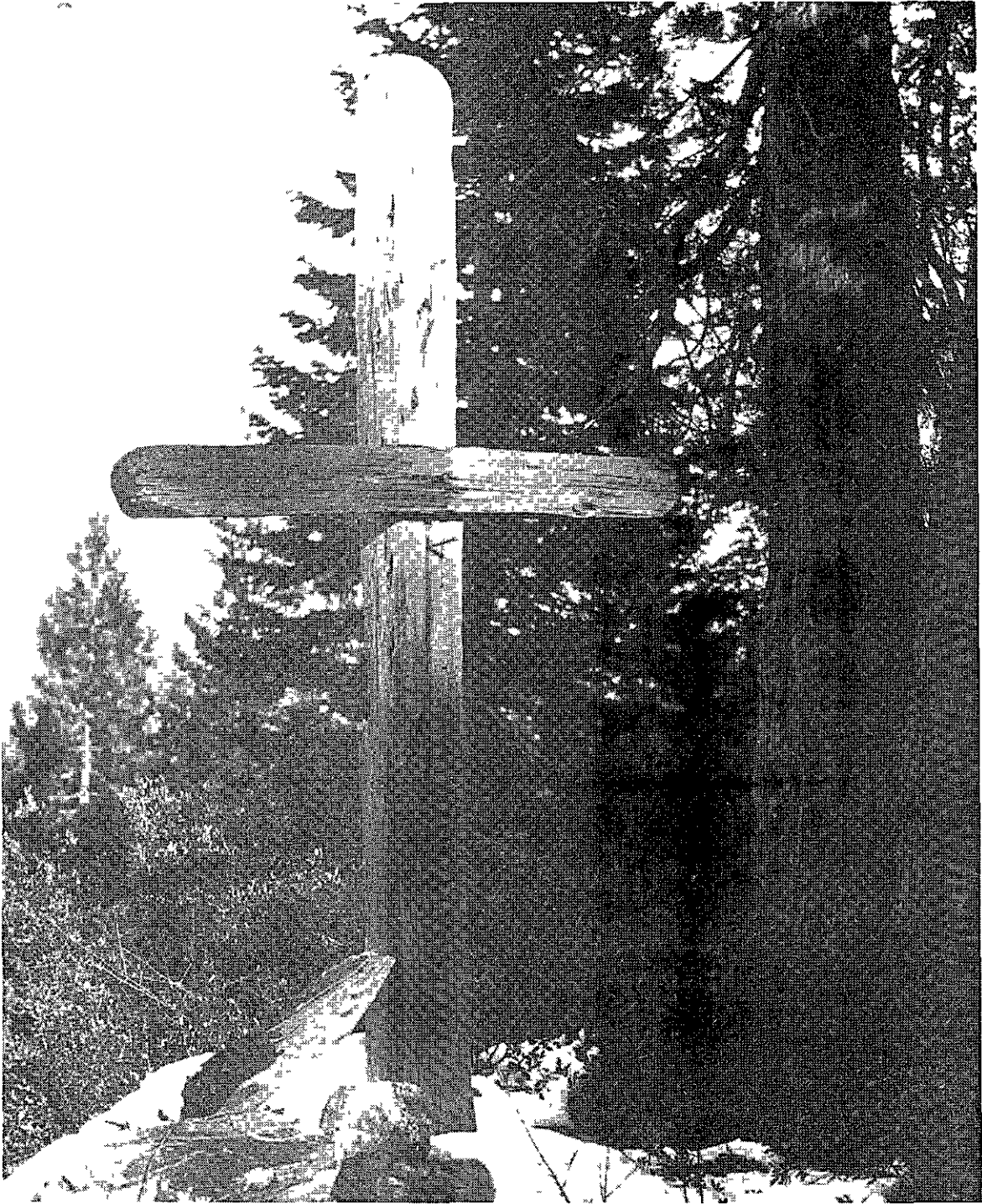
Technical forestry assistance is the responsibility of the California Department of Forestry and Fire Protection. Programs such as the Federal Forestry Incentives Program and the California Forestry Incentives Program are administered by the State. The TNF does not administer or provide technical assistance to private landowners for these two programs.

The urban and community development program involves both research and technical assistance through the State for the improvement of natural resources on private lands. One such program, which the TNF was instrumental in developing and actively supports, is the Resource Conservation and Development Program for an area called the High Sierra Resource Conservation and Development (RC&D) Area. The High Sierra RC&D area is one of three within California approved by the Secretary of Agriculture. The Secretary has directed the Forest Service to assist the RC&D areas to the extent of available funds. The Soil Conservation Service (SCS) is the agency responsible for administering activities relating to these areas.

The counties of Sierra, Nevada, Eldorado, and Placer lie within the High Sierra RC&D Area. Within this RC&D area are five SCS Resource Conservation Districts (formerly SCS Districts). The governing council for the High Sierra RC&D area is composed of the following members.

- 1 President
- 5 Representatives, 1 from each SCS RCD
- 4 Representatives, 1 from each county government
- 1 Representative from the Sierra Planning Organization

The council establishes policy direction and provides necessary administrative guidance to ensure an action plan. The action plan is developed by the council to use local people who are interested in and familiar with specific resources. These citizens are aided by resource specialists from local, State, and Federal agencies, including those from the TNF. The council has established these citizen committees to evaluate resources and to respond to the council with suggested necessary improvements.



Pioneer Cross, Donner Trail, c 1940

VIII. GLOSSARY

LIST OF ABBREVIATIONS

This list of abbreviations and acronyms used in the EIS and Forest Plan is provided for quick reference. Terms that are not self-explanatory are defined in the Glossary, which follows.

AIFRA	American Indian Freedom of Religion Act of 1978*	FFF	fighting forest fire funds*
AMS	analysis of the management situation*	FHWA	Federal Highway Administration
APSQ	annual programmed sale quantity*	FLPMA	Federal Land and Policy Management Act*
ARR	archaeological reconnaissance report	FMEI	fire management effectiveness index*
ASQ	allowable sale quantity*	FS	Forest Service
ATV	all-terrain vehicle	FSH	Forest Service Handbook
AUM	animal unit month*	FSM	Forest Service Manual
BD	brush disposal	FVC	future visual condition
BF	board foot (feet) of timber*	FWS	U.S. Fish and Wildlife Service
BLM	Bureau of Land Management	FY	fiscal year (USFS: October 1 - September 30)
BMP's	best management practices*	GRI	geologic resource inventory
BSS	base sale schedule*	HCM	habitat capability model
CA	capability area*	HCRS	Heritage Conservation and Recreation Service
CAS	capable, available, and suitable*	ICO's	issues, concerns, and opportunities*
CDF	California Department of Forestry and Fire Protection	ID	interdisciplinary
CDF&G	California Department of Fish and Game	IDT	interdisciplinary team*
CEQ	Council on Environmental Quality*	IFG	instream flow group
CFR	Code of Federal Regulations	IVQO	initial visual quality objective
CFS	cubic feet per second*	IPM	integrated pest management*
CIA	compartment inventory analysis	K	thousand (metric)
CRMP	coordinated resource management planning	KGRA	known geothermal resource area*
CMAI	culmination of mean annual increment*	K-V	Knudson-Vandenberg Act of 1930*
CY	calendar year	LAC	limits of acceptable change
DBH	diameter breast height*	LCT	Lahontan cutthroat trout
DEIS	draft environmental impact statement*	LMP	land management planning
DFP	draft forest plan	LRMP	Land and Resource Management Plan
DWR	Department of Water Resources	LTBMU	Lake Tahoe Basin Management Unit*
EA	environmental assessment*	LTSYC	long-term sustained yield capacity
EFFALT	effective alteration*	M	thousand
EFFF	emergency fire fighting funds	MA	management area*
EGC	effective ground cover	MAA	management agency agreement
EIC	ending inventory constraint*	MAI	mean annual increment*
EIS	environmental impact statement*	MAR	management attainment report
E.O.	executive order	MBF	thousand board feet (of timber)
EPA	Environmental Protection Agency	MCF	thousand cubic feet (of timber)
ERA	equivalent roaded acre*	MDB&M	Mount Diablo Benchmark and Meridian
EVC	existing visual condition	MIR	minimum implementation requirement*
FA&O	fire, administration, and other	MIS	management indicator species*
FEIS	final environmental impact statement	MM	million
FERC	Federal Energy Regulatory Commission	MMBF	million board feet (of timber)
		MMBTU	million British thermal units
		MMCF	million cubic feet (of timber)
		MMR	minimum management requirement*

MOA	memorandum of agreement	RS	Ranger Station
MOU	memorandum of understanding	RVD	recreation visitor day*
N/A	not applicable	Rx	prescription*
NEPA	National Environmental Policy Act of 1970*	SAI	sale area improvement
NF	National Forest	S&G	standard and guideline*
NFF	National Forest Fund	SAOT	skiers-at-one-time*
NFFL	Northern Forest Fire Laboratory	SAR	silvicultural accomplishment report
NFMA	National Forest Management Act of 1976*	SHPO	State Historical Preservation Officer
NFS	National Forest System*	SIA	Special Interest Area*
NHPA	National Historic Preservation Act of 1966	SMZ	streamside management zone*
NNL	National Natural Landmark'	SO	Supervisor's Office
NPB	net public benefits*	SOHA	spotted owl habitat area*
NRHP	National Register of Historic Places*	SPM	semi-primitive motorized ROS class*
NRI	National Rivers Inventory	SPNM	semi-primitive nonmotorized ROS class*
NRT	national recreation trail*	SRA	state responsibility area*
NVC	net value change*	SRI	soil resource inventory*
OHV	off-highway vehicle*	SUP	special-use permit*
ORV	off-road vehicle	T&E	threatened and endangered species*
OSHA	Occupational Safety and Health Administration	TNF	Tahoe National Forest
P	primitive ROS class*	TOC	threshold of concern
PAOT	persons-at-one-time*	TSI	timber stand improvement*
PCT	Pacific Crest Trail	U	urban ROS class*
PL	public law	USC	United States Code
PNV	present net value*	USDA	U.S. Department of Agriculture
PSW	Pacific Southwest Region: R5	USDI	U.S. Department of Interior
R	rural ROS class*	USFS	United States Forest Service
RARE	roadless area review and evaluation	USGS	United States Geological Survey
RARE II	second roadless area review and evaluation (1979)*	VAC	visual absorption capability*
RD	Ranger District*	VIS	visitor information service
R5	Region 5: Pacific Southwest Region	VQI	visual quality index*
RIM	recreation information management*	VQO	visual quality objective*
RN	roaded natural ROS class*	WFHR	wildlife and fish habitat relationships*
RNA	Research Natural Area*	WFUD	wildlife and fish user day*
RO	Regional Office	WIN	watershed improvement needs
ROS	recreation opportunity spectrum*	WST	Western States Trail
ROW	right-of-way*	YSM	yard substandard material
RPA	Forest and Rangeland Renewable Resources Planning Act of 1974*	YUM	yard unutilized material

* term defined in glossary

DEFINITIONS

A

accessed	Within 1/4 mile of a system road.	administrative cost	Costs of required general administration which are prorated over fixed, variable, and investment costs.
acquired status (lands)	Those lands acquired by purchase, gift, or exchange subsequent to creation of the National Forest	administrative site	A single or multiple grouping of facilities which may facilitate one or more administrative functions. The site can be seasonal or year-around and is a focus of administrative activities for particular geographic areas.
acre-foot	The amount of water or sediment that would cover one acre to a depth of one foot (43,560 cubic feet; 325,851 gallons).	administrative unit	All the National Forest System lands for which one Forest Supervisor has responsibility.
activity	A work process that is conducted to produce, enhance, or maintain an output or achieve an administrative and/or environmental quality objective.	administratively-designated areas	Areas designated by the Secretary of Agriculture, the Chief of the Forest Service, or the Regional Forester because they merit special attention and management, such as scenic or geological areas
activity fuels	Fuels which have been directly generated or altered by management activity.	affected environment	The physical, biological, social, and economic environment within which human activity is proposed.
activity fuels, current	Fuels resulting from management activities, land occupancy or other causes generated after July 1, 1975.	age class	An interval, usually 10 to 20 years, into which the age range of vegetation is divided for classification or use.
activity fuels, prior	Fuels resulting from management activities, land occupancy or other causes generated before July 1, 1975.	allocation	The assignment of sets of management practices (prescriptions) to particular land areas to achieve the goals and objectives of the alternative.
activity outputs	The quantifiable goods or services resulting from any management actions taken on the Forest.	allotment	See range allotment.
adjudicate	To settle judicially; generally in regards to water rights.	allowable sale quantity (ASQ)	The quantity of timber that is intended to be sold from the lands suitable for timber production covered by the Forest Plan for a time period specified by the Plan. This quantity is usually expressed on an annual basis as the 'average annual allowable sale quantity.'
administration-endorsed areas	Areas recommended by the President to Congress for classification or designation as National Wildernesses, Wild and Scenic Rivers, or National Recreation Areas.	alternative	In Forest planning, a given combination of resource uses and a mix of manage-

<p>ment practices that achieve a desired management direction, goal, or emphasis.</p> <p>amenity (amenity value) Typically used in land management planning to describe those resources for which market values (or proxy values) are not or cannot be established. See also nonmarket outputs</p> <p>American Indian Freedom of Religion Act of 1978 (AIFRA of 1978) A legal guarantee of noninterference (barriers) for Native Americans concerning their religious practices.</p> <p>anadromous fish Fish that live part of their lives in saltwater and part in fresh water. Salmon, steelhead, and shad are examples.</p> <p>analysis areas An aggregation of like capability areas with sufficiently similar physical, biological, and administrative conditions that they would probably respond in a like manner to management activities. See also capability areas.</p> <p>analysis level II A method to evaluate the effectiveness of proposed fire management program options designed to meet fire management objectives from land management planning.</p> <p>analysis of the management situation (AMS) A step in Forest planning in which the Forest's ability to supply goods and services in response to society's demand for those goods and services is determined</p> <p>animal unit month (AUM) The amount of forage required to sustain one mature cow (1000 pound cow or equivalent) for one month.</p> <p>annual programmed sale quantity (APSQ) The annual programmed sale quantity is that part of the ASQ which is programmed for a specific year. This is a new term for the programmed harvest.</p>	<p>apparent naturalness The degree to which each roadless area reflects levels of environmental modification.</p> <p>aquatic ecosystem The stream channel, lake, water, biotic communities, and the habitat features that occur therein. All living and nonliving components of aquatic environments</p> <p>area of influence A delineated geographic area within which the present or proposed actions of a forest unit exert an important influence on residents and visitors.</p> <p>arterial roads See roads</p> <p>artifact A simple object (such as a tool or ornament) showing early human workmanship or modifications.</p> <p>aspect The compass direction that the slope of a land surface faces toward</p> <p>assigned value A monetary value that represents the price consumers would be willing to pay for Forest outputs, whether or not such prices are actually paid to the Federal Government. In Forest planning the term refers to both market and nonmarket outputs because it is National policy to provide most Forest outputs at either no charge to consumers or at a price less than the willingness to pay price</p> <p>auriferous gravel The gold bearing gravel deposits of the Sierra Nevada, specifically those of mid-Eocene age, or approximately 50 million years old.</p> <p>available lands Those portions of the National Forest not administratively excluded from any particular use, most often timber harvest or livestock grazing.</p>
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average annual cut

The volume of timber harvested in a decade, divided by 10; used as a basis for comparison of alternatives.

avoidance area

An area having one or more physical, environmental, institutional or statutory impediments to corridor designation.

B

backcountry

An undeveloped area where dispersed, off-highway recreation such as hiking and trail bike riding may occur. Generally describes semi-primitive motorized and semi-primitive nonmotorized recreation opportunities.

background

The view beginning 3-5 miles from the observer and as far into the distance as the eye can detect the presence of objects.

Also, in economics, naturally occurring; uninduced.

background level (background, natural background level)

The ever-present environmental conditions or effects above which a phenomenon must manifest itself in order to be detected.

basal area

The cross-sectional area of tree stems, including the bark, measured at 4.5 feet above the ground; expressed in square feet/acre.

base sale schedule (BSS)

A timber sale schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity. This definition expresses the principle of nondeclining flow.

base timber harvest schedule

See base sale schedule.

BD funds

Brush disposal (BD) funds are a collection deposit from timber harvesting (primarily) used to finance fuel hazard reduction.

benchmark

An analysis of the supply potential of a particular resource, or of a set of resources subject to specific management objectives or constraints. Benchmarks define the limits within which alternatives can be formulated.

benefit-cost analysis

An analytical approach to making choices on the basis of receiving the greatest benefit for a given cost or producing the required level of benefits at the lowest cost. Also referred to as cost effectiveness analysis when the benefits cannot be quantified in terms of dollars.

benefit-cost ratio

Measure of economic efficiency, computed by dividing total benefits by total costs. Usually both benefits and costs are discounted to present. See also discounting

best management practice (BMP)

A practice or a combination of practices that is determined to be the most effective and practical means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals. BMP's include structural and/or nonstructural controls and operation and maintenance procedures. BMP's for National Forests in California are shown in Water Quality Management for National Forest System Lands in California, USDA Forest Service, April, 1979, and have been approved by the California Water Quality Control Board. The BMP's are under section 208 of the Clean Water Act (PL 92-500). See Appendix E

biological control

The use of one biological organism to control another.

<p>biological growth potential The average net growth attainable in a fully stocked natural forest stand</p>	<p>1930 mandates that the building maintenance needs (levels I-III) are approximately three percent of present worth. The levels are:</p>
<p>biological potential The maximum possible output of a given resource limited only by its inherent physical and biological characteristics.</p>	<p>I - Provide minimum health and safety (maintenance) to existing facilities.</p>
<p>biomass The total mass (e.g., weight, volume) of living matter in a biological system</p>	<p>II - Protect Government investment of existing facilities.</p>
<p>board foot (BF) The amount of wood equivalent to a piece 12 inches long, and 12 inches wide.</p>	<p>III - Provide improvement and replacement of existing facilities.</p>
<p>bole A tree stem once it has grown to substantial thickness, capable of yielding saw timber.</p>	<p>IV - Provide minimum construction of new facilities.</p>
<p>botanical area An area which has been designated by the Forest Service as containing specimens or group exhibits of plants, plant groups, and plant communities which are significant because of form, color, occurrences, habitat, location, life history, arrangement, ecology, environment, rarity, and/or other features.</p>	<p>V - Provide major new facility construction.</p>
<p>broadcast burning A technique of applying fire to target fuels which ignites a burnable material over the entire unit being treated</p>	<p>Note. The effects of the five levels are cumulative. For example, if operating at Level II in a certain area, Levels I - II would have to be provided; if operating at Level III, Levels I - III would have to be provided, etc. Funding for the different levels is also cumulative.</p>
<p>browse Leaf and twig growth of shrubs, woody vines, and trees available for animal consumption, usually based on current year's growth; act of consuming browse.</p>	<p>burning prescription Written direction stipulating fire environment conditions, techniques, and administrative constraints necessary to achieve specified resource management objectives by use of fire on a given area of land</p>
<p>building investment level A measure of building maintenance and/or building construction intensities and budget allocations. There are five building investment levels which incorporate facility (structure and supporting utility system) maintenance and/or construction. The levels are applied to each alternative based on proposed facility requirements. FSM</p>	<p>C</p> <hr/> <p>CalVeg Type</p> <p>CalVeg Type was used synonymously for CalVeg Series. The Series level identifies vegetation by general dominance types, i.e., chamise, greenleaf manzanita, and huckleberry oak. The criteria for identification of Series is that only dominant overstory vegetation is named. Series identification is based upon a combination of canopy cover and life form (physiognomy), and must meet the minimum canopy cover criteria. The minimum cover criteria for identification of all Series is 25 percent, except for the Series within the Herbaceous Formation Class where the</p>

minimum cover criteria is two percent (National Standards).

Series are usually designated by a single dominant species. However, when two species codominate a dual species designator is used, or when three or more species occur in comparable amounts, a multi-species designator is used

canopy

The more-or-less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees in a stand or forest.

capability

The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity. Capability depends upon current **site** conditions such as climate, slope, landform, soils, and geology, and the application of management practices such as silviculture or protection from fire, insects, and disease.

capability area (CA)

The smallest unit of land or water used in Forest planning. They are discrete and recognizable units classified primarily according to physical (soil), vegetative, administrative, and biological factors. They are homogeneous in their ability to produce resource outputs and also their production limitations.

capable timber lands

Those portions of the Forest that have an inherent ability to produce crops of industrial wood; they must produce at least 20 cubic feet of wood fiber per acre per year.

capable, available, suitable lands (CAS)

National Forest System lands that have been determined to be capable, available, and suitable for timber management.

capable, available, suitable analysis

An analysis conducted to determine which lands can be considered for

allocation to timber management. Analysis criteria are outlined in 36 CFR 219.14.

carrying capacity

The number of organisms of a given species and quality that can survive in, (and not cause deterioration of), an ecosystem through the **least** favorable environmental conditions that occur within a stated interval of time.

chargeable volume

All volume included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity, based on regional utilization standards. Consistent with the definition of timber production, planned production of fuelwood is not included in the allowable sale quantity and is therefore nonchargeable.

Class I Area

An area designated for the most stringent degree of protection from future degradation of air quality. As applied to the National Forest by the Clean Air Act, as amended August 1977, the term covers all wilderness areas larger than 5,000 acres that were in existence as of August 1977.

Class II Area

An area not designated as Class I. The Clean Air Act designates mandatory Class I Areas. States may redesignate (upgrade) Class II Areas to Class I where appropriate. The Granite Chief Wilderness is designated Class II.

clearcutting

Harvesting of all merchantable trees in one cut or area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand, or strip.

climax stage

The culminating stage in plant succession for a given **site** where the vegetation has reached a highly stable condition. See also succession.

<p>closed canopy A condition that exists when the crowns of the trees in a stand cover 100 percent of the potential open space.</p>	<p>community cohesion The degree of unity and cooperation within a community in achieving its goals.</p>
<p>closure The administrative order restricting either location, timing, or type of vehicle use in a specific area.</p>	<p>community lifestyles The ways in which residents conduct their everyday routines and how the 'way they live' is associated with the National Forest.</p>
<p>codominant One main crown class of trees with their tops in the upper canopy but lower than the dominant trees. See also dominant</p>	<p>community stability The capacity of a community to absorb and/or <i>cope</i> with change without major hardships to groups or institutions within the community.</p>
<p>collector roads See roads.</p>	<p>compartment The unit of land that is most commonly used to initiate project-level planning and implementation. For example, the initial phase of planning (letter of intent) for a timber sale begins at the compartment level. Management areas are aggregations of compartments. Compartments are composed of stands or capability areas. Thus, outputs or attributes of small on the ground units can be aggregated upward progressively from stands to compartments to management areas to Ranger Districts to the Forest. Conversely, Forestwide goals can be disaggregated downward. There are 151 compartments and 106 management areas on the Forest.</p>
<p>commercial forest lands Forest land that is producing or is capable of producing crops of industrial wood and (a) has not been withdrawn by Congress, the Secretary, or the Chief; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soil productivity, or watershed conditions; and (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within 5 years after final harvesting</p>	<p>condition class The dominant existing vegetation or physical features found on a unit of land. Forested condition classes are described by the dominant existing timber species and size class. Non-forested condition classes include rock, brush, water, mountain meadows, and prairie grass.</p>
<p>commercial species Tree species suitable for industrial wood products.</p>	<p>confine fire To restrict the fire within determined boundaries established either prior to the fire, during the fire, or in an escaped fire situation analysis.</p>
<p>commercial thinning See thinning.</p>	<p>conifer Tree that bears cones and in most cases has needle or scale-like leaves, such as pine, spruce, hemlock, or fir.</p>
<p>commercial timber sales The selling of cutting rights in specified tracts of timber to the wood-products industry for the purpose of supplying timber to meet the demands of consumers.</p>	
<p>commodity A resource product with commercial value; a tangible or physical output such as timber, forage, minerals, and water.</p>	

<p>constraints Limitations; actions which cannot be taken or which must be taken</p>	<p>long. In wood volume, two cords roughly equal 1 MEF.</p>
<p>consumer surplus The difference between the amount actually paid by consumers for a good or service and the amount each individual would be willing to pay.</p>	<p>core area See spotted owl core area</p>
<p>consumptive use Use of a resource that reduces the supply.</p>	<p>corridor A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries.</p>
<p>contain fire To surround a fire, or any spot fires with a control line, as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions.</p>	<p>cost The price paid or what is given up in order to acquire, produce, accomplish, or maintain anything.</p>
<p>Conti decision In 1971, the first Roadless Area Review and Evaluation (RARE) was conducted. In 1972, Judge Samuel Conti of the Northern District Court of California ruled in <i>Sierra Club v. Butz</i> that further study and an EIS must be prepared prior to the allocation of roadless areas to nonwilderness. The Middle Yuba RARE I was affected by this decision.</p>	<p>cost effective Achieving a specified level of outputs or objectives under given conditions, for the least cost</p>
<p>control fire To complete the control line around a fire, any spot fires therefrom, and any interior islands to be saved; burn out any unburned area adjacent to the fire side of the control line; and cool down all hot spots that are immediate threats to the control line, until the line can reasonably be expected to hold under foreseeable conditions.</p>	<p>cost efficiency The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specified levels in the least costly manner. Cost efficiency is usually measured using present net value, though use of benefit-cost ratios and rates-of-return may be appropriate.</p>
<p>cooperative and private land grazing permit A permit which allows the Forest Service to administer grazing on private land within allotments. The private land owners waive the administration to the Forest Service through a cooperative agreement or through the range permittee.</p>	<p>cost plus net value change (C+NVC) Each fire option processed through the analysis has a resultant C+NVC. The cost (C) is the sum of the FFP and FFF costs for a given option. Net value change (NVC) is the mathematical sum of the various monetary resource effects, both positive and negative for that option. The cost plus net value change (C+NVC) is the algebraic sum of FFP, FFF, and NVC. The C+NVC value is the comparative measure between options processed through the analysis</p>
<p>cord A stack of wood measuring four feet high, four feet deep, and eight feet</p>	<p>Council on Environmental Quality (CEQ) An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.</p>

cover	Vegetation used by wildlife for protection from predators and weather conditions, or in which to reproduce.	to sites, structures, buildings, districts, and objects associated with or representative of people, cultures, and human activities and events.
cover/forage ratio	The ratio, in percent, of the amount of area in forage condition to that area in cover condition.	cumulative off-site watershed effects All impacts on beneficial uses of water that occur away from the locations of actual land use and are transmitted through the fluvial system. Effects can be either beneficial or adverse and result from the synergistic or additive effects of multiple management activities within a watershed.
critical habitat	Key land areas used by wildlife for forage, reproduction, or cover.	cunit A unit of wood containing 100 cubic feet of solid volume
crown	The upper part of a tree carrying the main branch system and foliage	cutting cycle The planned time between successive cutting in a stand of timber.
crown closure	Percent of canopy closure.	
cubic foot	A unit of measure usually referring to wood volume (1 foot x 1 foot x 1 foot).	
cubic foot per second (CFS)	Unit measure of streamflow or discharge, equivalent to 449 gallons per minute or about 2 acre-feet per day.	
cull	Any lumber production item rejected because it does not meet certain specifications.	
culmination (of mean annual increment) (CMAI)	The age at which a particular stand of trees reaches its maximum annual growth rate on a cubic feet/year basis. '95% culmination' refers to the age at which the annual growth rate is 95% of the maximum. Generally does not apply to wild stands.	
cultural properties	The physical evidence (a site, structure, building, or object) of what man has made, and the context in which it occurs.	
cultural resources	cultural resources are the tangible and intangible aspects of cultural systems, living and dead, that are valued by a given culture or contain information about the culture. Cultural resources include, but are not limited	
D		
<hr/>		
	decadence	Refers to decaying or declining tree stands.
	decision space	The limits within which Forest planning alternatives occur. The outer limits are defined by benchmarks in Forest planning.
	decking areas	Sites that are intermediate between stump and mill used for temporary log storage.
	demand	The quantity of goods or services called for, given a price of other combination of factors.
	demand analysis	A study of the factors affecting the quantity and price of a good or service that would be used or purchased by consumers if made available
	departure	A level of timber production that allows the planned sale and harvest to drop in a future decade (as opposed to

nondeclining yield). See also nondeclining yield.

dependent communities

Communities whose social, economic, or political life would become discernably different in important respects if outputs from the National Forest were significantly altered.

dependent species

A species for which a habitat element (e.g., snags, vegetative type) is deemed essential for the species to occur regularly or to reproduce.

design capacity

The maximum theoretical amount of use a developed recreational site was built to accommodate.

developed recreation site

Distinctly defined area where facilities are provided for concentrated public use, e.g., campgrounds, picnic areas, boating sites, and interpretive facilities.

diameter at breast high (DBH)

The diameter of a tree measured 4 feet 6 inches above the ground on the uphill side.

direct outputs

Resource outputs that are caused by the action and occur at the same time and place.

discounted benefit

The present value of future benefits

discounted cost

The present value of future costs.

discounting

An adjustment made to costs and benefits to compensate for the fact that dollars received or spent in the future have a lower value today than dollars in the present. For example, it would be preferable to receive \$100 this year rather than in one year from now because it could be invested at 4 percent simple interest and be worth \$104 in one year. Thus, given the choice between receiving benefits worth \$100 today or benefits worth \$100 one year from today, one would

choose to receive it today. Discounting reduces future costs and benefits to reflect that fact and enables comparisons to be made of benefits and costs occurring at different points in time

discount rate

The interest rate which is used to reduce costs and benefits occurring in the future to their value in the present. The higher the discount rate, the lower the present value of future benefits and costs. See discounting and present value.

dispersed recreation

Outdoor recreation which occurs outside of planned and maintained recreational facilities, e.g., scenic driving, hunting, backpacking.

distance zone

One of three categories used in the visual management system to divide a view into near and far components. The three categories are (1) foreground, (2) middle ground, and (3) background. See individual entries.

diversity

The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

dominant

One main crown class of trees with their tops in the uppermost layers of the canopy.

draft environmental impact statement (DEIS)

The statement of environmental effects required for major Federal actions under Section 102 of the National Environmental Policy Act and released to the public and other agencies for comment and review.

E

early forest succession

The plant and animal community that develops immediately following the

	removal or destruction (eg, from wildfire) of the vegetation in an area		tion and satisfy a given visual quality objective. The EFFALT index is also a means to compare the overall visual impact of each alternative.
ecology	The study of plants and animals in relation to their environment.	electronic sites	Areas designated for the operation of equipment which transmits and receives radio or light signals, excluding television aerials and antennas for local pick-up of programming.
economic efficiency	A measure of how efficiently inputs are used to achieve outputs when all costs and benefits can be identified and valued. Usually measured by present net value or benefit-cost ratios.	encumbrance	See title claim.
ecosystem	The system formed by the interaction of a group of organisms and their environment.	endangered species	Any species designated as Endangered by the Secretary of the Interior. Generally, a species which is reduced in numbers or distribution so as to be in danger of extinction.
ecotone	The transitional zone between two overlapping habitats or plant communities.	endemic plant	A plant confined to a certain country or region.
edge	The area where plant communities meet or where successional stages or vegetative conditions within plant communities come together. See also edge contrast.	ending inventory constraint (EIC)	Constraint to ensure that the total timber volume left at the end of the planning horizon will equal or exceed the volume that would occur in a managed Forest.
effective alteration (EFFALT)	The effective alteration approach is a means of quantifying the degree of visibly detectable alteration of (1) the amount of time needed for a harvested area to recover and to again look like a part of the surrounding characteristic landscape; (2) the spatial quantity of harvested areas, (3) the degree of alteration of a harvested area in the time between harvesting and recovery of a natural appearance; and (4) the consequential cumulative effects of harvested areas over time and space. These factors are combined in EFFALT to generate an index for a given area or the entire forest which represents the relative level of noticeable landscape alteration for that area at a particular time. The EFFALT level can then be correlated to the visual condition level resulting from that degree of harvest activity and is thus a means of establishing the percentage of an area that can be harvested in order to achieve a given visual condi-	environmental analysis	An analysis of alternative actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interaction.
		environmental assessment (EA)	A concise public document required by the regulations implementing the National Environmental Policy Act which briefly provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact
		environmental impact statement (EIS)	A statement of the environmental effects which would be expected to result from proposed alternative management actions

environmental management with some livestock	Livestock use is within the apparent present capacity of the range environment. Investments for range management are applied only to the extent required to maintain the environment at a maintenance level in the presence of grazing.	erosion, rill	An erosion process in which numerous small channels of only several centimeters in depth are formed; occurs mainly on recently cultivated soils
Eocene	An epoch of the Tertiary between the Paleocene and the Oligocene, or the corresponding system of rocks.	erosion, sheet	The removal of soil from the land surface by rainfall and surface runoff. Often interpreted to include rill and interrill erosion.
ephemeral Stream	A stream or portion of a stream that flows only in direct response to precipitation. It receives little or no water from springs and no long-continued supply from snow or other sources. Its channel is at all time above the water table.	even-aged management	The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and therefore tree sizes) throughout the forest area. The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at harvest (or rotation) age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands (See also Appendix L of the EIS.)
epidemic	Populations of plants, animals, and viruses that build up, often rapidly, to highly abnormal and generally injurious levels.	even-aged stand	A forest stand composed of trees having no or relatively small differences in age.
equivalent road acres (ERA)	A method of categorizing the amount of soil compaction resulting from land management activities in terms of a common base—a compacted road surface. Roads are assigned an ERA value of 1.00 and all other disturbed areas are assigned ERA values less than or equal to one. The values are generally less than one as most other management activities do not cause 100 percent of the ground surface to become compacted.	even-flow	Maintaining a relatively constant supply of timber from decade to decade.
erosion	The detachment and movement of soil from the land surface by wind, water, or gravity.	exclusion area	An area in which lineal rights-of-way or corridor designations are prohibited by law.
erosion, gully	The erosion process whereby water accumulates in narrow channels and, over short periods, removes the soil from this narrow area to considerable depths, ranging from 0.5 meter to as much as 25 to 30 meters.	extensive range management	Management seeking full utilization of the animal unit months available for livestock grazing. No attempt is made to maximize livestock forage production by cultural practices such as seeding.
		extensive vs intensive management	Loose terms generally used to indicate a degree or level of management. For

example, intensivetimber management refers to all practices or a set of practices which emphasize timber production on land suitable for timber production. Extensive timber management consists of practices necessary to manage timber on land emphasizing other values.

final cut

Generally, removal of the last trees left in a stand; specifically, removal of the last seed bearers or shelter trees after regeneration is established under a shelterwood system.

firebreak

A wide strip of land from which fuels have been removed down to the soil. Used to stop or check fires and to provide access for fire fighting. See also fuelbreak.

F

facility

A single or contiguous group of improvements for the purpose of shelter and/or support of Forest Service programs (FSM 7310.5). A general term which includes all property (both government owned and privately leased) such as buildings, dams, reservoirs, airports, roads, trails, parking areas, campgrounds and picnic areas, scaling platforms, and lookouts.

fire intensity level

A measure of difficulty to control a fire (based on rate of spread and heat output) expressed as a relationship to flame length.

In level II fire planning, intensity level was developed by using slope, fuel model information, aspect, position on the slope, time of day, time of year, and weather information such as temperature, wind, relative humidity, and fuel moisture.

Intensity level corresponds to flame length as follows:

Fire Intensity Level	Flame Length (in feet)
1	0-2
2	2-4
3	4-6
4	6-8
5	8-12
6	12+

Federal Land Policy and Management Act (FLPMA)

An act of October 21, 1976, that guides management of public lands administered by the Secretary of Interior through the Bureau of Land Management, but contains provisions affecting the Secretary of Agriculture's authority regarding rights-of-way, acquisition and exchange of lands, withdrawals, and grazing

fee ownership

Ownership of property that has no limitation, qualification, or condition affecting it. The maximum ownership possible in real estate under the system of property rights founded on English common law.

fire management

Activities required for the protection of resources and values from fire, or the use of fire to meet land management goals and objectives.

fee site

A Forest Service recreation area in which users must pay a fee. Fee sites must meet certain standards and provide certain facilities as specified in the Forest Service Manual.

fire management area

One or more parcels of land with clearly defined boundaries to which established fire management direction is applied which is responsive to land and resource management goals and objectives

Fighting Forest Fire Funds (FFF)

This is nonallocated money that is spent specifically on suppressing wildfires.

fire management direction	Fire management prescriptions which are applied to land to meet the planned, measurable results desired from fire protection and use. These results consist of acceptably burned acreages (pars), operating constraints, and prescribed fire objectives which are based on land management goals and objectives.	management of the National Forests' renewable resources and of land and resources management plans for units of the National Forest System. It also requires a continuing inventory of all National Forest System lands and renewable resources.
Fire Management Effectiveness Index (FMEI)	A relative measure of annual fire management program effectiveness, calculated by adding the presuppression and suppression costs to the resource damage and then dividing by the total number of acres protected.	forest cover type A classification of forest land referring to a group of timber stands of similar development and species composition. Examples in California include the Douglas-fir, mixed conifer, pine, and true fir types.
fire risk	The potential risk of fire, resulting from human activities.	Forest Fire Protection (FFP) Allocated fire protection funding for the Forest. Essentially, this is the fire management budget. For purposes of application to FORPIAN this FFP budget is exclusive of Regional and National fire program budgeted costs.
fixed cost	A cost committed for the planning period. In Forest planning, the total cost of the minimum level benchmark.	forest highway A designation for roads approved by the Federal Highway Administration, California Department of Transportation, and USDA Forest Service as meeting the following criteria:
floodplain	The lowland and relatively flat areas adjoining inland waters (including debris areas and flood-prone areas) including, at a minimum, that area subject to a 1% (100-year recurrence) or greater chance of flooding in any given year.	<ol style="list-style-type: none"> 1) It is under the jurisdiction of a cooperator and open to public travel. It may be a Forest Service road which the cooperator accepts for jurisdiction and maintenance responsibility upon construction through the Forest Highway program. 2) It provides a connection between an adequate and safe public road and the renewable resources of the NF's which are essential to the local, regional, or National economy, and/or the communities, shipping points, or markets which depend upon those renewable resources. 3) It serves other local needs, such as schools, mail delivery, commercial supply, and access to private property within the National Forest System land or serves traffic of which a preponderance is generated by use of the NFS and its resources, or serves NFS generated traffic volumes that have a substantial impact on roadway design and construction.
forage	All browse and nonwoody plants used for grazing or harvested for feeding livestock or game animals.	
forb	Any nongrass-like plant having little or no woody material on it. A palatable, broad-leaved, flowering herb whose stem, above ground, does not become woody and persistent.	
foreground	The portions of a view between the observer and up to 1/4 or 1/2 mile distant	
Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA)	An act of Congress requiring the preparation of a program for the	

forest land

Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for nonforest use. Lands developed for nonforest use include areas for crops, improved pasture, residential, or administrative areas, improved roads of any width, and adjoining road clearing and powerline clearing of any width.

Forest Supervisor

The official responsible for administering an administrative unit of National Forest System lands

forest survey site classes

A measure of the maximum capacity of an area to produce timber, measured in cubic feet per acre per year.

Site Class	Max. Cu. Ft./Ac./Yr.
1	225 +
2	165-224
3	120-164
4	85-119
5	50-84
6	20-49
7	less than 20

Forest system roads

Roads that are part of the Forest development transportation system, which includes all existing and planned roads, trails, and airfields, as well as other special and terminal facilities designated as Forest development transportation facilities.

forest trees

Woody plants having a well-developed stem and usually more than 12 feet in height at maturity.

FORPLAN

A linear programming model used for developing and analyzing Forest planning alternatives. See also linear programming and Appendix B of the EIS.

free to grow

Young conifers (seedlings, saplings, and poles) will be considered 'free to grow' if they have the growth potential to meet timber

resource planning assumptions in forest land management plans.

Note, To achieve Plan assumptions regarding tree growth, then generally manzanita, snow-brush, and bear clover must be kept at 'light' densities (e.g. 20% crown closure), and other brush at medium densities (e.g. 21-40% crown closure) for two decades. Tanoak and grasses must be kept at or below medium densities for one decade.

front country

Arid areas where conditions favor the growth of grass, brush, and the cover which are not generally associated with commercial forest types. On the west slope of the Sierra Nevada these areas are found at elevations between 1000 and 4500 feet, and on the east side from elevations between 3000 and 5000 feet, occasionally higher.

fuelbreak

A wide strip of land, strategically placed for fighting anticipated fires, where hazardous fuels have been replaced with less burnable fuels (like grass). They divide fire-prone areas into smaller parcels for easier fire control and provide access for fire fighting. See also fuelbreak.

fuel loading

The oven-dry weight of all existing fuels in a given area. Loading is further analyzed by fuel size. Loading or mass per unit is usually expressed in tons per acres.

fuel model

A simulated fuel complex for which all the fuel descriptors have been specified.

fuels

Any material capable of sustaining or carrying a forest fire, usually natural material both live and dead

fuels management

The practice of planning and executing treatment or control of any vegetative material which adversely affects meeting fire management direction based upon resource management goals and objectives

fuel treatment

The rearrangement or disposal of natural or activity fuels to reduce fire hazard or to accomplish other resource management objectives.

fuelwood
Wood cut into short lengths for burning;
firewood

full service management
Management of developed recreation facilities
which fully meet standards.

future use determination
A study of recreation special-use **permits** to
appraise future management strategies.

G

game species
Any species of wildlife or fish for which seasons
and bag limits have been prescribed and
which are normally harvested by hunters,
trappers, and fishermen under state or Federal
laws, codes, and regulations. See also harvest
species.

geologic hazard
Potentially hazardous areas or situations,
usually divided into Landslide, Seismic, or
Volcanic Hazards, *i.e.*, dealing with earth
processes and material.

geological area (Special Interest Area)
An area dominated by unique landforms or
rock/mineral types.

geothermal energy
The natural heat of the earth captured by
means of subsurface fluids.

goal
A concise statement that describes a desired
condition to be achieved sometime in the
future. It is normally expressed in broad,
general terms and is timeless in that it has no
specific date by which it is to be completed.
Goal statements form the principal basis from
which objectives are developed.

goods and services
The various outputs, including on-site uses,
produced from forest and rangeland resources.

grass/forb
An early forest successional stage where
grasses and forbs are the dominant vegetation.

grazing
Consumption of herbage or artificial pasture
forage by animals.

grazing permittee
An individual who has been granted written
permission (a grazing permit) *to* graze livestock
for a specific **period** on a range allotment.

groundwater
Subsurface water in the part of the ground
that is wholly saturated.

group selection
A cutting method used in the uneven-aged
silvicultural system in which trees are removed
periodically in small groups resulting in
openings typically less than **two** acres, but
occasionally up to five acres where terrain,
stand characteristics, operation factors, and
nontimber resource objectives make this
necessary.

growing stock trees
Live trees, meeting specified standards of
quality or vigor, included in growth and yield
projections to arrive at the allowable sale
quantity.

guideline
An indication or outline of policy or conduct
that is not a mandatory requirement (**as**
opposed to a standard, which is mandatory).

H

habitat
The sum of environmental conditions of a
specific place that is occupied by an organism,
a population, or a community.

habitat, late successional stage
timber stands in which mature and overmature
trees are more than 80% of the conifer cover.

hard snag
A dead tree that has not started to rot; a sound,
dead tree.

hardwoods
A conventional term for the wood of broadleaf
trees (e.g. oaks, maple, madrone)

harvest cutting

The final crop of trees either in single cutting or in a series of regeneration cuttings. Generally, the removal of physically mature trees in contrast to cutting, that remove immature trees

harvest level

The quantity of timber that may be sold from the area of land covered by a Forest Plan for a time period specified by the Plan. The quantity is usually expressed on an average annual basis.

harvest species

Species of animals or fish that are hunted or fished for human consumption. See also game species.

hazard

The measure of ease of ignition, fire spread potential, and fire suppression difficulty, as influenced by the type, volume, size, distribution, condition, arrangement, and location of the fuel profile.

heliport

An area used by helicopters for landing and takeoff. Generally has supporting facilities and is accessible by road or boat.

helispot

Any designated landing spot for helicopters, it is distinguished from a heliport by lack of supporting facilities.

herbicide

A substance used to inhibit or destroy plant growth.

hiding cover

Trees of sufficient size and density to conceal wildlife from view at 300 feet.

home range

An area in which an individual animal spends all or most of its time.

horizontal diversity

The distribution and abundance of different plant and animal communities across a specified area of land. The greater number of communities, the higher the degree of horizontal diversity.

hydrophytic vegetation

Plants that grow in water or saturated soil, riparian vegetation.

I

impact counties

Local counties directly affected by TNF management: Nevada, Placer, Plumas, Sierra, and Yuba Counties.

indicator species

Species selected to represent fish, wildlife, or vegetation in directing and coordinating forest management and monitoring the effects of planned management activities

indirect outputs

Outputs caused by the action but which are later in time or farther removed in distance but still reasonably foreseeable.

initial attack

The prompt and preplanned response to a wildfire.

initial visual quality objective

See visual quality objective, initial.

inner gorge

A geomorphic feature that consists of the unbroken slope adjacent to a stream channel which usually has a slope gradient of 65 percent or greater. Debris sliding and avalanching, which are the dominant mass wasting processes in this zone, are both the result of recent oversteepening of the inner gorge zone from stream incision and, secondly, the result of activation of rotational-translational slides which toe out in the inner gorge.

inputs

Land, labor, and capital required to produce outputs. Inputs are generally represented by activity costs

institutional analysis

An examination of the institutions within the area of influence and their expected responses to Forest Service actions. See also area of influence.

instream flow

The volume of surface water in a stream system passing a given point at a given time.

integrated pest management (IPM)

A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The informa-

tion considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resource values, alternative regulatory tactics and strategies, and benefit-cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable

intensive range management

All available technology for range and livestock management is considered. Management seeks to maximize livestock forage production consistent with the constraints of maintaining the environment and providing for multiple use

intensive timber management

Timber management practices carried out to increase timber yield per acre.

interdisciplinary team (IDT)

A group of individuals with different training that solves a problem or performs a task through frequent interaction so that disciplines can combine to provide new solutions.

intermediate harvest

Any removal of trees from a stand between the time of its formation and the regeneration cut. Most commonly used intermediate cuttings are release, thinning, improvement, and salvage.

intermittent stream

A stream or portion of a stream that, in general, flows during wet seasons and is dry during dry seasons. The groundwater table lies above the bed of the stream during the wet season but drops below the bed during the dry season.

interpretive services

Activities and displays that interpret the natural and social history of the National Forest environment for the visiting public and inform them about National Forest goals, programs, and services

intolerance

The inability of a tree to grow satisfactorily in the shade of, and in competition with, other trees

inventory data and information collection

The process of obtaining, storing, and using current inventory data appropriate for planning and managing a National Forest.

investment level

See building investment level.

irretrievable commitments

Applies to losses of production or use of renewable natural resources for a period of time. For example, timber production from an area is irretrievably lost during the time an area is used for skiing. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.

irreversible commitments

Decisions causing changes which cannot be reversed. Once used, the resource cannot be reinstated, nor can opportunities be recovered. Applies to nonrenewable resources such as minerals and cultural resources.

issue

A point of discussion, debate, or dispute.

issues, concerns, and opportunities (ICO's)

Refers to the public issues, management concerns and opportunities identified in the Forest planning process.

J

K

K-V funds

Funds collected and used for resource improvement on timber sale areas. The Knutson-Vandenberg (K-V) Act of 1930 requires purchasers of National Forest timber to make deposits of money as part of the payment for the timber to cover the cost of reforestation and timber stand improvement. The National Forest Management Act of 1976 expanded this authority to include 'protecting and improving the future productivity of the renewable resources of the forest land on such sale area, including sale area improvement operations, maintenance and construction, reforestation, and wildlife habitat management.

key deer winter range

The portion of the yearlong range where deer congregate in response to food and/or cover during severe winter weather conditions.

Known Geothermal Resource Area (KGRA)

An area in which the geology, nearby discoveries, competitive interests, or other indicia would, in the opinion of the Secretary, engender a belief in people who are experienced in the subject matter that the prospects for extraction of geothermal steam or associated geothermal resources are good enough to warrant expenditures of money for that purpose

L

Land and Water Conservation Act

Provides funds for and authorizes Federal assistance to the states in planning, acquisition, and development of needed land and water areas and facilities; provides funds for the Federal acquisition and development of outdoor recreation resources.

land exchange

The conveyance of nonfederal land or interests to the United States in exchange for National Forest System land or interests in land

landform

A natural landscape that exists as a result of wind, water, or geologic activity, e.g., a plain, plateau, basin, mountain, etc.

landing

Any place where logs are assembled for further transport, commonly with a change in the transportation method, such as from tractor to truck

landline location

To locate, survey, mark, and post the property boundaries of National Forest lands

landownership adjustment

The transfer of the ownership of lands by land exchange, land purchase, donations, or other methods.

land status

The ownership status of lands within the National Forest boundaries.

leasable minerals

Minerals which are developed (i.e., explored, mined, extracted, etc) by a permit or lease, in contrast to minerals development through claims staking. Congress has specified the following as leasable minerals: coal, oil, gas, potassium, sodium, phosphate, oil shale, native asphalt, solid and semisolid bitumen and bituminous rock, geothermal resources: deposits of sulfur in Louisiana and New Mexico; and all minerals including hardrock on acquired land. See also locatable mineral and salable mineral.

Level IV Law Enforcement Officer

A Forest Service employee who has graduated from the Federal Law Enforcement Academy and holds a law enforcement commission signed by the Regional Forester. District Level IV officers generally perform other duties as well as law enforcement.

lifestyle

The characteristic way people live, indicated by consumption patterns, work, leisure, expressed values, and other behavior.

linear programming

A mathematical method used to determine the most effective allocation of limited resources between competing demands when both the objective (e.g., profit or cost) and the restrictions on its attainment are expressible as a system of linear equalities or inequalities (e.g., $y = a + bx$).

livestock crossing permit

A permit issued to allow reasonable movement of livestock across Forest Service administered lands for any legitimate purpose, as long as damage is prevented to land, its resources, and improvements

local roads

See roads.

locatable minerals

Generally refers to hardrock minerals on public domain lands which are mined and processed to recover valuable metals, such as gold and copper, chemical grade limestone, and asbestos. May include any solid, natural inorganic substance occurring in the crust of the earth except for common mineral materials and leasable minerals. Generally developed through a claims location and patent process. See also leasable mineral and salable mineral.

long-term effects

Those outcomes that will be significant beyond the RPA planning horizon of 50 years.

long-term sustained yield capacity (LTSYC)

The highest uniform wood yield from lands being managed for timber production that may be sustained, under a specified management intensity, consistent with multiple-use objectives

low standard service

A level of recreation management prescribed when recreation costs are reduced in an alternative and would therefore require different management direction.

M

MIR

See minimum implementation requirement.

MMR

See minimum management requirement.

maintenance level costs (long term)

Costs required to keep capital assets at a given level of service and availability. These are variable costs.

maintenance level costs (short term)

Costs incurred to keep capital assets at a given level of service and availability. These are fixed costs.

management area (MA)

A contiguous area of land used in planning, usually consisting of differing analysis areas, to which one or more prescriptions are applied. Management areas do not vary between alternatives; however, the prescriptions applied to them vary.

management concern

An issue, problem, or a condition which constrains the range of management practices identified by the Forest Service in the planning process.

management direction

A statement of multiple-use and other goals and objectives, the associated See management prescriptions, and standards and guidelines for attaining them.

management emphasis

Long-term management direction for a specific area or type of land.

management indicator species (MIS)

See 'indicator species'

management intensity

The management practice or combination of management practices and associated costs designed to obtain different levels of goods and services.

management practice

A specific activity, measure, course of action, or treatment.

management prescription

Management practices and intensity selected and scheduled for application on a specific area to attain multiple-use benefits and other goals and objectives.

management standards and guidelines

Direction (requirements) and/or constraints to achieve or maintain specified conditions or objectives Standards are quite specific; guidelines are of a more general nature. (See standard and also guideline.)

marginal component

In the previous 1978 timber management plan, this component included the commercial forest land species and products which are not operable or marketable at the present but may be at a later date. It included areas not qualifying as standard or special components primarily because of excessive development costs, low product values, or resource protection constraints

market outputs

Outputs normally exchanged in markets as evidenced by transactions: timber, range, developed recreation, minerals, and commercially utilized fish.

mass movement

Downslope movement of a portion of the land's surface, i.e., a single landslide or the gradual, simultaneous downhill movement of the whole mass of loose earth material on a slope face.

mast

Nuts, acorns, and similar products of hardwood species, which are consumed by animals.

mature timber

Trees that have attained full development, particularly height, and are in full seed production

maximum erosion hazard

An assessment of the relative hazard of the loss of surface soil that would occur in an average year if protective vegetation were removed.

maximum modification

See visual quality objectives

mean annual increment (MAI)

The total increment of volume growth per acre up to a given stand age, divided by that age. Culmination of mean annual increment is the stand age where the mean annual increment of growth is greatest, or reaches its highest point.

merchantable timber

Timber of salable quality.

middleground (middle distance)

The space between the foreground and the background in a picture or landscape. The area located from 1/4-1/2 to 3-5 miles from the viewer.

midsuccessional

Refers to a plant community which is midway in the process of development from pioneer to climax or mature community.

mineral

An inorganic substance occurring naturally with characteristics and economic uses that bring it within the purview of the mineral laws; a substance that may be obtained under applicable laws from public lands by purchase, lease, or preemptive entry.

mineral development

The preparation of a proven deposit for mining.

mineral entry

Filing a claim to hold or purchase public land in order to claim the rights to minerals it contains

mineral exploration

The search for minerals on lands open to mineral entry.

minerals, common variety

Deposits which, although they may have value for use in trade, manufacture, the sciences, or in the mechanical or ornamental arts, do not possess a distinct, special economic value for such use over and above the normal uses of the general sum of such deposits. May include sand, stone, gravel, pumicite, cinders, pumice (except that occurring in pieces over two inches on a side), clay, and petrified wood.

minerals, leasable

Coal, oil, gas, phosphate, sodium, potassium, oil shale, geothermal steam, and locatable minerals on lands with acquired status.

minerals, locatable

Those hard rock minerals which are mined and processed for the recovery of metals. These include certain nonmetallic minerals and uncommon varieties of mineral materials, such as valuable and distinctive deposits of limestone or silica, and any solid, natural, inorganic substance occurring in the crust of the earth, except for the common varieties of mineral materials and leasable minerals.

mineral withdrawal

The withholding of an area of federal land from mineral entry or development in order to reserve the area for a particular public purpose or program.

minimum implementation requirement (MIR)

Policy to ensure alternatives are minimally acceptable and implementable on the ground. Generally the requirements are within agency control, but there is little discretionary control at the Forest level

minimum management requirement (MMR)

Absolute minimum requirements taken from 36 CFR 219.27 and generally outside of the Forest Service authority to change. They are needed for consistency of analysis between Forests

minimum instream flow needs

A specified level of flow through a channel that must be maintained for biological, physical, or other purposes.

minimum level

The minimal level of management which complies with applicable laws and regulations, including prevention of significant or permanent impairment of the long-term productivity of the land. This level would be needed to maintain

the unit as part of the National Forest System and to manage uncontrollable outputs and uses, together with associated costs and outputs.

mining claims

That portion of the public mineral lands held for mining purposes in which the right of exclusive possession of locatable mineral deposits is vested in the locator of a deposit.

mitigation

Actions to avoid, minimize, reduce, eliminate, or **rectify** the adverse effects of a management practice.

modification

See visual quality objectives.

monitoring and evaluation

The evaluation, on a sample basis, of Forest Plan management practices to determine how well objectives have been met, as well as the effects of those management practices on the land and environment.

monotypical (stands)

Only one species.

mortality

Dead or dying trees resulting from forest fire, insects, diseases, or climatic factors.

motorized recreation

Recreation using motorized equipment (motor-cycling, driving for pleasure, off-highway vehicle travel, etc.).

multiple use

The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output (36 CFR 219.3 NFMA Regulations).

municipal watershed

The watershed from which the runoff is used for drinking purposes in a city.

municipal water system

A water system which has at least 5 service connections or which regularly serves 25 individuals for 60 days.

N

National Environmental Policy Act (NEPA)

A 1969 Act of Congress to declare a National policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the nation and to establish a Council on Environmental Quality.

National Forest Management Act (NFMA)

A law passed in 1976 as amendments to the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of Regional and Forest plans and the preparation of regulations to guide that development.

National Forest System (NFS) land

Federal lands that have been designated by executive order or statute as National Forests, National Grasslands, and other related lands for which the Forest Service is assigned **administrative responsibility**.

National Natural Landmark (NNL)

Sites or areas which possess exceptional values or qualities which illustrate or interpret the natural heritage of the nation

National Recreation Trails (NRT)

Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the National system of trails authorized by the National Trails System Act. National Recreation Trails provide a variety of outdoor recreation uses in or reasonably accessible to urban areas.

National Register of Historic Places (NRHP)

A listing maintained by the U.S. National Park Service of significant archaeological, cultural,

historical or architectural properties which are important at the local, state, or National level.

National Wild and Scenic River System

Rivers with outstanding remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values designated by Congress under the Wild and Scenic Rivers Act for preservation of their free-flowing condition.

National Wilderness Preservation System

All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department of agency having jurisdiction.

natural fuels

Fuels not directly generated or altered by management activity. This includes fuels which have accumulated because of deliberate fire exclusion.

natural opening

A break in the forest canopy; an area of essentially bare soil, grasses, forbs, or shrubs in an area dominated by trees.

natural regeneration

The renewal of a tree crop by natural means, without human seeding or planting. The new crop is grown from self-sown seed or by vegetative means, such as root suckers.

net cash flow

Return to the U.S. Department of the Treasury less total Federal cost.

net National Forest area

All National Forest System land within the proclaimed National Forest boundary.

net public benefit (NPB)

An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both qualitative and quantitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield.

net value change (NVC)

(Also net resource value change.) The sum of the changes resulting from increases (benefits) and decreases (damages) in the value of outputs from the land area affected as the consequences of fire.

network

See spotted owl network

new construction

Any *process* or project which creates a new facility.

no action alternative

The alternative which continues current management direction

nonaccessed

Further than 1/4 mile to a system road.

nonchargeable volume

All volume not included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity. Includes volume from unsuitable timber production lands and products, such as fuelwood, posts, and rails.

noncommodity

An intangible output normally associated with a service or opportunity provided to the public; for example, nonmotorized recreation. A resource output that cannot be bought and sold.

nonconsumptive species

Wildlife species not used typically - hunted, fished, or trapped but normally observed, studied, photographed, etc. (as opposed to harvest or consumptive species).

nonconsumptive use

Use of a resource that does not reduce the supply. For example, nonconsumptive uses of water include hydroelectric power generation, boating, swimming, and fishing.

nondeclining yield

Timber scheduled for harvest so that any given decade's production does not fall below the previous decade's production.

nondiscretionary resources

Resources considered in the Plan where the choices of allocation are limited by law and/or regulation, or by unique, site-specific sets of physical-environmental requirements, e.g ,

Research Natural Areas, Wild and Scenic Rivers.

nongame

Species of animals which are not managed for sport hunting.

nonmarket outputs

Forest outputs not normally exchanged in markets. In the Forest Service, the following resource outputs are classified as nonmarket outputs: dispersed recreation, wildlife and fish user days, and water. Although not normally exchanged in markets, the Forest Service assigns proxy values for analysis purposes.

nonmotorued recreation

Recreational opportunities provided without the use of any motorized vehicle. Participation in these activities will be accomplished through the use of foot, ski, snowshoe, or horseback travel. Motorized vehicle equipment may be authorized for administrative purposes of resource management or for emergency situations.

nonpoint source pollution

Pollution occurring at many diffuse locations, as opposed to pollution from a specific site, such as a factory.

nonpriced benefits

Benefits to the Forest and surrounding communities which do not have market value; for example, visual quality.

nonstructural range improvements

Cultural practices (type conversions, noxious weed control, seeding, etc.) that are carried out to increase forage production and enhance or protect the other resources.

not capable

Lands not capable of growing at least 20 cubic feet of timber per acre per year.

O

objective

A concise, time-specific statement of measurable planned results that respond to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.

objective function

A term used in linear programming referring to the item to be maximized (or minimized) in the problem's solution, e.g., maximize PNV, maximize timber.

occupancy trespass

The illegal occupation or possession of National Forest System land or property

off-highway vehicle (OHV)

Any motorized vehicle capable of cross-country travel on or immediately over land, water, snow, ice, or other natural terrain. Examples of OHV's include motorcycles, four-wheel drive vehicles, and snowmobiles.

OHV classifications and categories

The classification of Tahoe National Forest System land for OHV use is as follows:

1. Useable areas. Categories are
 - (0) Closed.
 - (1) Open.
 - (2) Designated routes only/open oversnow.
 - (3) Designated routes only.
 - (4) Designated routes only summer/closed over snow.
 - (5) Closed summer/open winter.
 - (6) Designated routes only/closed 11/16 to 4/30.
2. Unuseable areas. Acres with slopes greater than 50 percent with OHV access limitations.

Restricted OHV access includes unusable areas and useable areas (Categories 2,3,4,5, and 6).

opening

An area of forest land from which timber has been harvested (generally using even-aged silviculture). Openings will generally be 5 to 40 acres in size. An opening is no longer considered an opening when a specified number of trees per acre within a specific forest type and site class have reached 4 5 feet in height.

opportunity cost

The value of the benefits foregone when a management alternative is chosen

output

A product, service, or on-site use produced from forest and rangeland resources

overmature timber

Trees that have attained full development, particularly in height, and are declining in vigor, health, and soundness.

overstory

That portion of the trees in a forest which forms the upper or uppermost layer.

overstory removal

Removal of the last seed-bearing or shelter trees after regeneration is considered to be established. Under a shelterwood method, it is the last removal cutting.

P

partial retention

See visual quality objectives.

particulates

Small particles suspended in the air and generally considered pollutants.

patented mining claim

A patent is a document which conveys a title. When patented, a mining claim becomes private property and is land over which the United States has no property rights except as may be reserved in the patent. After a mining claim is patented, the owner does not have to comply with requirements of the General Federal Mining law, but is required to meet State regulations.

perennial stream

A stream or portion of a stream that flows throughout the year. The groundwater table lies above the bed of the stream at all times.

permanent range

Those areas that contain plant communities that are self-regenerating under the prevailing climate, soils, and topography, and show no evidence of replacement by other communities.

persons-at-one-time (PAOT)

A term used to measure recreation capacity indicating the number of people that can use a facility or area at one time.

phenotype

The observable appearance of an organism, especially with respect to genetically influenced expressions, of one specific character.

planned area

Any geographic area for which a fire management area plan, or a National Forest land and resource management plan, has been developed, and which includes specific fire management direction for wildfire protection and, if applicable, the use of prescribed fire.

planned ignitions

A fire started by a deliberate management action.

planning area

The area of the National Forest System covered by a Regional guide or Forest Plan.

planning criteria

Standards, terms, tests, rules, and guidelines by which the land and resource management planning process is conducted and upon which judgments and decisions are based.

planning file

The computerized resource data file developed for land management planning purposes. This file contains over 70 items of resource information for each of over 25,000 capability areas on the TNF.

planning horizon

The overall time period considered in the planning process that spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions. In Region 5 the current planning horizon covers the years 1989 to 2149 (160 years).

planning period

Ten to fifteen years. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits for which management policy is prescribed.

planning records

A system that records data collections, analysis, interdisciplinary team decisions, and activities that result from the process of developing a Forest Plan, revision, or significant amendment.

plan of operation

A written plan, approved by a Forest officer, prepared by those engaged in mining activity on the Forest describing mining and mineral processing activities that will likely cause a significant disturbance of surface resources,

- and showing the design and development sequence of the operation.
- plantation**
A stand of trees resulting from planting or artificially seeding an area.
- point pollution source**
An identifiable source from which pollutants are or may be discharged, e.g., a pipe, ditch, channel, tunnel, conduit, well
- pole timber**
Live trees of commercial species at least 5 inches in diameter at breast height but smaller than sawtimber, and of good form and vigor.
- policy**
A guiding principle upon which is based a specific decision or set of decisions.
- potential timber yield**
The harvest needed to achieve the optimum sustained-yield level under intensive forestry on regulated areas. The productivity of the land, conventional logging technology, standard cultural treatments, and interrelationship with other resource uses and the environment are considered. This term was used in older plans.
- practice**
See management practice.
- precommercial thinning**
See thinning.
- preferred alternative**
The alternative recommended for implementation as the Forest Plan.
- prescribed fire**
Intentional use of fire under predetermined weather and fuel conditions to achieve specific objectives, e.g., dispose of slash, control unwanted vegetation.
- prescription (Rx)**
The set of management practices applied to a specific area to attain specific objectives. Region 5 distinguishes between FORPLAN Rx's and management Rx's. FORPLAN Rx's are sets of 'pure' activities without spatial allocation and standards and guidelines. Management Rx's are written as a result of allocating FORPLAN solutions to management areas and imposing standards and guidelines. See also management area.
- present net value (PNV)**
The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned, and the total discounted costs of managing the planning area
- present value**
The value which results when benefits or costs expected to occur in the future are discounted. See also discounting.
- preservation**
See visual quality objectives.
- presuppression**
The planning and preparatory work done before a fire occurs to ensure effective fire suppression action. Includes: (1) recruiting and training fire forces, (2) planning and organizing attack methods; (3) procuring and maintaining fire equipment; and (4) maintaining structural improvements necessary for the fire program.
- prevention**
Activities directed at reducing the number of fires that start, including public education, law enforcement, personal contact, and reduction of fuel hazards.
- pristine**
No trace of human activities; landscape alterations from natural ecological processes only: equates to visual condition level I and complies with the preservation VQO.
- program budget**
The schedule of projects and activities to be carried out on the Forest for a year for which money has been appropriated.
- programmed harvest**
The part of the potential yield that is scheduled for harvesting. It is based on current demand and funding. This term was used in older plans.
- protection boundary area**
National Forest System land, adjacent and intermingled private land, and other public land under the Forest Service fire protection umbrella because their protection is necessary to protect National Forest System resources.
- proxy value**
A value assigned to a good or service for evaluation purposes when the good or service

is not bought nor sold and an established monetary price does not exist.

public issue

A **subject** or question of widespread public interest relating to management of the National Forest System.

Q

R

range

1) primary - includes areas which are readily accessible, have available water, and will be overused before livestock significantly graze other areas.

2) secondary - areas less preferred by livestock which will ordinarily not be grazed significantly until the primary range has been overused.

3) suitable - land that is or can be made accessible to livestock, that produces forage or has inherent forage producing capability

4) transitory - land temporarily suitable for grazing, but transient over time and/or location. For example, grass may cover an area for a period before being replaced by growth not suitable for forage.

5) unsuitable - area that should not be grazed by livestock because of unstable soils, steep topography, or inherent low potential for forage production.

range allotment (allotment)

An area designated for grazing a prescribed number and kind of livestock.

range carrying capacity

Permitted animal unit month (AUM) production.

range condition

The state of the plant community on a range site in relation to the potential natural plant community for that site. It is usually rated in the general categories of poor, fair, good, or excellent.

range permittee

See grazing permittee.

Ranger District

Administrative subdivisions of the Forest supervised by a District Ranger who reports to the Forest Supervisor.

range trend

Range trend is change in ecological range condition. It is measured by upward, static, and downward trend in range condition.

raptor

A bird of prey, e.g., eagle, hawk, owl.

RARE II

See Roadless Area Review and Evaluation II.

rate-of-return

Rate of interest at which the net discounted benefits equal the net discounted costs (Internal rate-of-return is a similar measure appropriate to private firms.)

real dollar value

A monetary value which compensates for the effects of inflation.

receipt shares

A percentage of revenue collected by National Forests which is given to state and county governments where the Forest is located for use on country roads and schools.

reconstruction

Any modification, improvement, or renovation of an existing facility.

recovery species

Federally listed threatened or endangered wildlife and fish species for which an objective has been set to raise the population to a viable level.

recreation information management (RIM)

The Forest Service system for recording recreation facility condition and use.

recreation opportunity spectrum (ROS)

A means of classifying and managing recreation opportunities based on physical setting, social setting, and managerial setting. The six different ROS classes briefly described are:

a. Primitive (P) - An area 3 miles or more from roads and trails with motorized use; generally

5,000 acres or more in an essentially unmodified natural environment.

b. **Semi-primitive nonmotorized (SPNM)**- An area 1/2 mile from roads and trails with motorized use; generally 2,500 to 5,000 acres with only subtle modifications to an otherwise natural setting.

c. **Semi-primitive motorized (SPM)** - Same as semi-primitive nonmotorized but with motorized use of roads and trails, including OHV touring, snowmobile, hiking, cross-country skiing, etc.

d. **Roaded natural (RN)** - An area 1/2 mile or less from roads; resource modifications range from evident to strongly dominant.

e. **Rural (R)** - The setting is substantially modified with structures or other cultural modifications.

f. **Urban (U)** - The setting is strongly dominated by structures, highways, and streets.

recreation visitor day (RVD)

Twelve (12) hours of recreation use in any combination of persons and hours, i.e., 1 person for 12 hours, 3 persons for 4 hours, etc.

reduced service management

Management of developed recreation facilities below established standards.

reforestation

Reestablishing a crop of trees on forest land by natural or artificial methods.

reforestation needs

Suitable timber land which is currently not stocked with commercial tree species. Lands occupied mainly with hardwoods, brush, or grasses scheduled for conversion to commercial conifers through reforestation

regeneration

Reestablishing a crop of trees on forest land by natural or artificial methods. Also, the young crop itself, which commonly is referred to as reproduction

regeneration cutting

Refers to logging stands to allow new crops to be planted; usually applied to stands which cannot economically be held because of poor stocking, health, thrift, quality, or composition.

regulated forest

A forest which has organized control of its timber resource so as to achieve a sustained volume yield equal to growth in any period

regulated harvest

The regulated harvest includes any volume included in calculations of the allowable sale quantity which is harvested from suitable commercial forest land. Regulated harvests are those calculated to systematize the production of forest products under principles of sustained yield on an annual or periodic basis. The allowable sale quantity is both a limitation of and an objective for the lands suitable for timber production that may be treated and the merchantable volume that may be removed during the planning period.

regulated timberland

Land which is capable and is managed to produce regular periodic yields of commercial timber in perpetuity. Ideally, a regulated forest would consist of equal areas in each age class so that the oldest stands could be cut annually to produce a sustained yield.

Regulation Class I (Reg Class I)

A FORPIAN prescription emphasis. **See TM-FUL**

Regulation Class II (Reg Class II)

A FORPIAN prescription emphasis. **See TM-RED.**

Regulation Class III (Reg Class III)

A FORPLAN prescription emphasis. Special cutting of timber stands designed to maintain or improve a specific characteristic of the land, such as visual emphasis area, streamside management zone, and fish and wildlife critical habitat

release and weeding

Freeing a tree or group of trees from immediate competition by eliminating growth that is overtopping or closely surrounding them.

Research Natural Area (RNA)

An area established specifically to preserve a representative sample of an ecological community, primarily for scientific and educational purposes.

resource element

A major category of activity required to accomplish the Forest Service mission. The eight resource elements are recreation, wilder-

<p>ness, wildlife and fish, range, timber, water, minerals, and human and community development.</p> <p>resource use and development opportunity A possible action, measure, or treatment and corresponding goods and services identified and introduced during the scoping process which subsequently may be incorporated into and addressed by the Forest Plan in terms of a management prescription.</p> <p>responsible line officer The Forest Service employee who has the authority to select and/or carry out a specific planning action.</p> <p>restoration Work necessary to restore a facility to the original construction standard or to repair to an acceptable condition any damage resulting from natural causes which exceeds that normally occurring for the area and not anticipated or provided for in the annual maintenance plan.</p> <p>retention See visual quality objectives.</p> <p>return to Treasury Monetary payment received for sale of forest outputs (timber, range, minerals, etc.).</p> <p>revegetation The reestablishment and development of a cover crop</p> <p>right-of-way (ROW) An accurately located land area within which a user may conduct operations approved or granted by the landowner. May also refer to a permit, easement, lease, license, or memorandum of understanding (MOU) used to authorize the land use</p> <p>right-of-way acquisition Acquiring rights-of-way for Forest Service use of lands owned by others.</p> <p>right-of-way grant Rights-of-way granted to others to use National Forest System land in the manner specified.</p> <p>riparian area Geographically delineated areas, with distinctive resources values and characteristics, that are comprised of both the terrestrial area adjacent to and inclusive of the riparian</p>	<p>ecosystem and the aquatic ecosystems. Land areas to which limited management activities are applied in the interest of affording added protection to riparian area dependent resources and water quality. They include all areas adjacent to perennial stream, lakes, and other water bodies. Exact boundaries of riparian areas are determined by on-site surveys.</p> <p>riparian dependent resources Those natural, intrinsic resources directly dependent upon the riparian area for their existence, including water, fish, certain wildlife species, riparian related aesthetics, and riparian related vegetation</p> <p>riparian ecosystem All living and nonliving components of riparian areas.</p> <p>RNA candidate An area which is being evaluated for possible nomination as a Research Natural Area</p> <p>roadless area As defined by the Roadless Area Review, an area of undeveloped Federal land within which there are no improved roads or roads maintained for use by motorized vehicles; generally 5,000 acres or larger unless adjacent to an existing Wilderness.</p> <p>Roadless Area Review and Evaluation (RARE) II The assessment of roadless and undeveloped land areas within the National Forests of 38 States as potential wilderness areas, as required by the Wilderness Act. This refers to the second such assessment which was documented in the National Forest System's final environmental impact statement of the Roadless Area Review and Evaluation, January 1979.</p> <p>road maintenance levels Level 1 Road normally closed to vehicle traffic Level 2 Road open for limited passage of traffic but not normally suitable for passenger cars Level 3. Road open for public traffic including passenger cars, but may not be smooth or comfortable Level 4 Road suitable for all types of vehicles, generally smooth to travel, and dust may be controlled</p>
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Level 5. Road is smooth and dust free, and the surface is skid resistant if paved.

roads

A general term denoting a way for purposes of travel by vehicles greater than 40 inches in width. Roads are functionally classified as:

a) arterial roads. Typically two-lane, surfaced roads serving large land areas and usually connecting with public highways.

b) collector roads. Single-lane or double-lane roads which are typically surfaced and serve smaller land areas. They usually form a link between arterial and local roads.

c) local roads. Typically native surface, single-lane roads accessing a single resource terminal facility such as a log landing, a campground, a trailhead, or ski facility.

rotation

The length of time between the formation or regeneration of a tree stand and its final cutting.

RPA

The Forest and Rangeland Renewable Resources Planning Act of 1974 requires the Secretary of Agriculture to submit, at five year intervals, a renewable resource program for protection, management, and development of the National Forest System, including forest development roads and trails, for cooperative Forest Service programs, and for research.

S

salable minerals

Minerals occurring in high volume, low-unit-value deposits which don't have a distinct or special economic value over similar materials and are therefore usually sold rather than leased or claim staked. Examples are sand, gravel, stone, and clay.

sale schedule

The quantity of timber planned for sale by time period from an area of suitable land covered by a forest plan. The first period, usually a decade, of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will be achieved and maintained.

salvage

Trees that have been killed or are dying from fire, flood, windstorm, disease or insect attack are harvested as soon as possible to minimize wood fiber deterioration and protect the remaining trees.

sanitation cutting

The removal of dead, diseased, insect, infested, damaged, or otherwise low vigor trees to minimize losses from pests, to prevent the spread of insects and disease, and to improve or maintain net growth prior to regeneration cutting.

sapling (timber definition)

Trees 1.59 inches DBH

satisfactory range condition

Vegetation is in fair condition with an upward trend or good condition with a static trend.

saw log

A log meeting minimum standards of diameter, length, and defect. For softwoods, they are at least 8 feet long, sound and straight, and with a minimum diameter inside bark of 6 inches.

sawtimber

Trees that will yield logs suitable in size and quality for producing lumber.

sawtimber, large (timber definition)

Trees 40.0 inches DBH.

sawtimber, medium (timber definition)

Trees 25.0-39.9 inches DBH.

sawtimber, small (timber definition)

Trees, 11.0-24.9 inches DBH.

scheduling (scheduled outputs)

Timing, cost, and location of outputs whose level (yields) depend on both the chosen prescription and the timing of its application.

scoping process

Process used to identify issues and concerns which are within Forest Service authority to resolve. See also Appendix A of the EIS.

sedimentation

The transporting and disposition of detached soil and rock material by concentrated flows of water.

seed tree cutting

Harvesting all trees in one cut except for a small number of seed bearers left singly or in small groups, usually 8 to 10 per acre. An even-aged stand results

selection cutting

Trees of varying sizes are harvested either as single scattered trees or in small groups at relatively short intervals; such cuttings are repeated indefinitely with the deliberate purpose and effect of creating or maintaining an uneven-aged stand.

sensitive species

Species recognized by the Regional Forester as needing special management in order to prevent them from becoming endangered or threatened. Species designated by the Regional Forester and included on the PSW Region's Sensitive Species list.

sensitivity level

A particular degree or measure of viewer interest in the scenic qualities of the landscape. See also visual sensitivity level.

seral stage

The plant and animal community which is in a transitional stage of succession. If left alone, the seral stage will pass, and another plant and animal community will replace it until the climax stage is reached.

shelterwood cutting

A regeneration method under an even-aged silvicultural system. A portion of the mature stand is retained as a source of seed and/or protection during the period of regeneration. The mature stand is removed in two or more cuttings commonly termed seed cutting and removal cutting. The seed cutting may or may not be preceded by a preparatory cutting

Sikes Act

Public Law 93-452. Authorizes joint development of cooperative programs for fish and wildlife by the States and Federal agencies on Federal lands.

silvicultural prescription

A plan for management of an individual timber stand including harvesting, reforestation, and stand tending.

silvicultural system

A combination of interrelated actions whereby forests are tended and harvested. The combi-

nation of management practices used to manipulate the vegetation results in forests of distinctive form and character, and this determines the combination of multiple resource benefits that can be obtained. Systems are classified as even-aged and uneven-aged. See also Appendix L of the EIS.

silviculture

Generally, the science and art of cultivating forest tree crops.

single tree selection cutting

The cutting method in which individual trees are removed to provide a stand with trees of different sizes and age classes on the same site. This method results in an uneven-aged stand.

site avoidance

A process whereby disturbance or destruction of a historical or prehistorical site is avoided through project design.

site preparation

Preparing an area of land for reforestation: may include removing unwanted vegetation and debris from a site.

size class

For purposes of Forest planning, size class refers to the three intervals of tree stem diameter used for classification of timber:

- 1) seedling/sapling 5" dbh or less
- 2) pole timber 5"-8" dbh
- 3) sawtimber 8" dbh and greater

skiers-at-one-time (SAOT)

A term used to measure recreation capacity which means the number of skiers that can use a facility or area at one time

slash

The residue left on the ground after timber cutting, or after storms, fire, etc. It includes unutilized logs, uprooted stumps, broken stems, branches, twigs, leaves, bark, and chips.

snag

A standing dead tree. For wildlife purposes, one that is at least 15 inches DBH and 20 feet tall. See also hard snag and soft snag

- social category
People with a common social characteristic such as age, nationality, occupation, hobby, interest, or educational level.
- social group
People who cooperate to pursue common interests and/or attain mutual goals.
- social impact
Changes in social or cultural conditions that directly or indirectly result from a Forest Service program, project, or activity.
- social impact analysis
The social component of the environmental analysis process; a systematic **effort** to determine how present programs or **proposed** actions affect the human environment.
- social organization
The structure of a society described in terms of roles, relationships, norms, institutions, and/or community cohesiveness and stability.
- social value
A shared standard of preference or desirability, as wealth, beauty, good health, honesty, or privacy.
- social variable
A social or cultural element such as population size, employment, opinion on an issue, crime rates, satisfaction with community life or recreation-use patterns, that can be evaluated at different times or places to show the effects of a Forest Service action.
- soft snag
A standing dead tree from which the leaves and most of the branches have fallen and which has started to rot internally.
- softwoods
Pertaining to conifer trees. See also conifer.
- SOHA**
Spotted owl habitat area.
- soil horizons
Layers of the soil each of which has comparatively uniform characteristics different from adjacent layers.
- soil productivity
The natural capacity of a soil to produce a specified plant or sequence of plants under a specified system of management.
- soil resource inventory (SRI)
me systematic examination, description, classification and mapping of soil.
- special component
Lands recognized in the previous 1978 timber plan needing specially designed treatment of the timber resource to achieve resource objectives. Included in this category are travel and water influence zones and general forest areas in which timber harvest is not a high priority management objective.
- Special Interest Area (SIA)
Areas established and managed for their unique scenic, geological, historical, archaeological, botanical, or other memorable features.
- special-use permit (SUP)
A permit authorizing the occupancy and use of National Forest System land in the manner specified. Permits are revocable under terms specified in the permit
- SPM**
Semi-primitive motorized; see recreation opportunity spectrum.
- SPNM
Semi-primitive nonmotorized; see recreation opportunity spectrum.
- spotted owl core area
Three hundred (300) or more continuous acres within which a known or potential spotted owl nest site is located.
- spotted owl network
The aggregate of SOHA's on the Forest.
- stand
A community of trees or other vegetation which is sufficiently uniform in composition, constitution, age, spatial arrangement, or condition to be distinguishable from adjacent communities and to **thus** form a management entity. The basic unit for silvicultural prescriptions.
- standard
A principle requiring a specific level of attainment, a rule to measure against.
- standard component
Lands recognized in the previous timber plan on which intensive timber management practices are not constrained by access or *eco-*nomics or where intensive management would

not unacceptably degrade environmental, aesthetic, or other land value considerations. This area is capable of producing timber crops that have a reasonable probability of demand under the economic conditions projected for the planning period.

standard of road

The standard of a Forest development road is described in terms of average daily traffic, user safety, short- or long-term facility, the traveled way width, average vehicular design speed, the road geometrics, and the type of pavement structure.

standards and guidelines (S&G's)

See standard and also guideline

standard service (recreation sites)

The administration, operation and maintenance of developed sites to established standards and management objectives for public service and use. Standards *for* public health, safety, and comfort are established in FSM 2330 and in various handbooks on design, maintenance, etc.

State Responsibility Area (SRA)

Lands protected by the TNF under a Statewide contract (cooperative agreement) with the California Department of Forestry

stocking level

The degree to which land is occupied by trees (measured by basal area and/or number of trees by size and spacing), compared with a stocking standard which establishes the stocking required to utilize fully the growth potential of the land

strategic/critical minerals

Minerals identified by Congress for stockpiling that are necessary for industry and National defense

stream class

A classification given to all named drainages or stream channels on the Forest, based on stream size, season, amount of flow, importance as a fishery or water source, and other characteristics. They range from Class I (largest, most important) to Class IV (small, often intermittent)

stream order

A method of numbering streams as part of a drainage basin network. The smallest unbranched mapped tributary is called first-order.

Streams receiving two or more first-order tributaries are second-order and so on

streamside management zone (SMZ)

An administratively designated zone designed to call attention to the need for special management practices aimed at the maintenance and/or improvement of watershed resources. SMZ's may include floodplains and wetlands, riparian areas, inner gorges, perennial streams, and intermittent streams showing signs of recurrent annual scour or deposition.

structural range improvements

Those range improvements constructed and maintained (fences, cattleguards, water developments, etc.) to facilitate the management of the range resource.

stumpage

Timber as it stands uncut.

subculture

A distinctive pattern of beliefs, values, norms, and customs shared by a portion of the population, often because of a common ethnic heritage, occupation, or religious or ideological Orientation.

succession

The gradual supplanting of one plant community by another as the site changes over time until the climax community is reached.

successional stage

Various plant communities existing *at different* points in time. Refers to directional, cumulative changes in the composition of species in a community.

suitability

The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

suitable lands

Acres of land selected for management of timber production on a regulated basis from land which has been identified as tentatively suitable. Thus, it is land which meets criteria a through e. of the tentatively suitable definition and which is to be managed for timber production. See also tentatively suitable lands.

supplemental water demand
Annual consumptive net water demand that exceeds useable water supply.

suppression
Actions taken to extinguish or confine a fire.

sustained yield
See long-term sustained yield.

sustained yield of products and services
The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment of the productivity of the land.

system road
Any classified Forest Service road that is managed and inventoried in the transportation information system. (See also Forest system roads)

T

target
Assignments made to the Forest by the Regional Forester. Also, a statement used to express planned results to be reached within a stated time period.

temporary grazing permit
A written authorization issued for a period not to exceed one year to graze a specific number, kind, and class of livestock for a specified time on the National Forest System or other land administered by the Forest Service.

tentatively suitable lands
Tentatively suitable lands are defined as

a. Presently forested, currently producing or capable of producing crops of industrial wood.

b. Not withdrawn from timber production by Congress, the Secretary of Agriculture, or the Chief of the Forest Service.

c. For which technology and knowledge exist and are available to ensure timber production without irreversible damage to soils, productivity, or watershed conditions.

d. Where there is reasonable assurance that adequate restocking can be attained within 5 years after final harvest.

e. Where adequate information is available to project responses to timber management activities.

term grazing permit
Written authorization issued for a specified period of from one to not more than ten years to graze a specified number, kind, and class of livestock on the National Forest System or other land administered by the Forest Service

territory
An area within a habitat that is occupied by an individual or group and is defended against other individuals or groups of the same species

thinning
A cutting made in an immature stand in order to stimulate the growth of the trees that remain and to increase the total yield of useful material from the stand material. Cut may or may not have commercial value.

threatened species
Any species designated as 'Threatened' by the Secretary of the Interior. This is a slightly lower designation than 'endangered' and is intended to prevent the decline of these species to a point at which the status would change to endangered.

tiering
The coverage of general matters in broader environmental impact statements or assessments with subsequent, narrower statements or assessments incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.

timber base
The lands within the Forest capable, available, and suitable for timber production (CAS lands).

timber harvest schedule
The quantity of timber planned for sale and harvest, by time period, from the area of land covered by the Forest Plan.

timber production
The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round

sections for industrial or consumer use. Does not include production of fuelwood.

timber sale program quantity

The volume of timber planned for sale during the first decade of the planning horizon. It includes the allowable sale quantity (chargeable volume) and any additional material (nonchargeable volume) planned for sale. The timber sale program quantity usually is expressed as an annual average for the first decade.

timber site index

A measure of site productivity based on the maximum rate of tree height growth. It is normally expressed as the height in feet reached by a tree at a given or base age (the site index).

timber stand improvement (TSI)

The use of noncommercial thinning, cleaning, weeding, and intermediate cuttings to eliminate or suppress less desirable vegetation and improve composition, condition, structure, or growth of a stand.

title claim (encumbrance)

Claim of ownership of National Forest System land by others.

TM-FUL

Lands managed under timber-full include even-age management, short rotations and intensive management practices, plus other resource values and outputs.

TM-MAR

Cutting practices on timber lands to meet visual (retention) and watershed (SMZ) objectives. The timber-special cutting level is about 5 percent of the current inventory per decade, plus other resource values and outputs.

TM-RED

Land managed under timber-reduced will co-emphasize nontimber resources and even-age timber management. An example of timber-reduced management is even-age management on a 150-year rotation meeting partial retention and spotted owl habitat. Other resource concerns are reflected in prescriptions and allocations plus other resource values and outputs.

tolerance

The ability of a tree to grow satisfactorily in the shade of, and in competition with, other trees.

tradeoff

The impact on an output or cost caused by changing another output or cost.

trail

A general term denoting a way for purposes of travel by foot, stock, or trail vehicle having a width less than 40 inches.

transitory range

Early successional stage vegetation with grass, forbs, and young shrubs that can be utilized by livestock until the vegetation matures into later successional stages. Transitory range is transient over both time and location.

true fir

Any conifer of the genus *Abies*, characterized by its pyramidal habit of growth.

type conversion

The conversion of one type of vegetation cover to another, e.g., forested to nonforested; one tree species to another.

U

unavailable

Lands not available for timber regulation since they have been withdrawn by the Chief or higher authority.

underburning

Broadcast burning under a canopy of timber. (Normally at moderate to low fire intensity levels, with flame heights and vegetation scorch designed to be within acceptable resource management limits.)

understory

Low-growing vegetation (herbaceous, brush or reproduction) growing under a stand of trees. Also, that portion of trees in a forest stand below the overstory.

uneven-aged management

The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and

development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within **each** area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection. See also Appendix L of the EIS.

unplanned ignition

A fire started at random by either natural or human causes, or a deliberate incendiary fire.

unregulated harvest

This is timber harvest not charged against the allowable sale quantity, and includes occasional volumes removed that were not recognized in calculations of ~~the~~ allowable sale quantity, such as cull or dead material and noncommercial species and products. It also includes all volume removed from nonsuitable areas

unregulated timber

Timber on commercial forest land that is not considered part of the annual harvest because other resource values, e.g., recreation, aesthetics, etc., are greater. This term was used in older plans. See also nonchargeable volume.

unsuitable lands

Refers to land which is not suited for timber production according to the following criteria defined in NFMA Regulations, **36 CFR 219.14:**

- a. Is not at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for nonforest use.
- b. There is not reasonable assurance that such lands can be adequately restocked within 5 years after final harvest.
- c. Technology is not available to ensure timber **production from the land without irreversible resource damage to soils productivity or watersheds.**
- d. Land has been withdrawn from timber production by Congress, the Secretary of Agriculture or the Chief of the Forest Service.

Urban/Rural/Wildland Interface

Urban/Rural/Wildland interface situations may occur when National Forest System lands are adjacent to private lands that have been, or

may be, developed within this planning period for recreation, rural, residential, ~~urban~~, or commercial uses. When National Forest management ~~objectives~~ differ from our neighbors, potential for mutual impacts exists.

utility corridor

Area of land set aside for power lines, pipelines, or other similar utilities

utilization

The removal of slash, submerchantable trees, and previously existing dead and down material for fire hazard reduction and **site** preparation.

utilization standards

Standards guiding the use and removal of timber which is measured in terms of DBH, top diameter inside the bark, and percent 'soundness' of the wood.

utilized top

The top diameter inside the bark, projected to be in the merchantable bole of the tree

V

variety class

A classification system for establishing three visual landscape categories according to the relative importance of the visual features. This classification system is based on the premise that all landscapes have some visual values, but those with the most variety or diversity of visual features have the greatest potential for having or attaining high scenic value.

- 1. **Distinctive** (variety class A). Unusual and/or outstanding landscape variety that stands out from the common features in the landscape.
- 2. **Common** (variety class B). Prevalent, usual, or widespread landscape variety; also refers to ordinary or undistinguished visual variety.
- 3. **Minimal** (variety class C). Little or no visual variety in the landscape: monotonous or below average compared to the common features in the landscape.

vegetation management

The practice of manipulating the species mix, age, fuel load, and distribution of wildland plant communities within a management area. It includes prescribed burning, grazing, chemi-

cal applications, biomass harvesting, and any other economically feasible method of enhancing, retarding, or removing the above-ground parts of plants.

vertical diversity

The distribution and abundance of different plant and animal communities from the ground level up.

viable populations

Sufficient numbers of individuals of reproductive age, geographically distributed so that the population can maintain its existence in the planning area over time. Sufficient amounts and existence over time.

viewshed

The landscape seen or potentially seen from all or a logical part of a travel route, use area, or water body.

visual absorption capability (VAC)

The ability of the landscape to withstand management manipulation without significantly affecting its visual character. Rated as high, moderate, and low.

visual condition level

A measure of the degree of human-caused alteration of a landscape from its natural condition. The amount of alteration defined by each level is as follows:

I. Pristine, no trace of human activities; only alteration from natural ecological processes.

II. Evidence of management activities is not detectable by the average viewer.

III. Effects on the landscape of management activities are visible but remain visually subordinate to the characteristic landscape.

IV. Landscape alterations caused by management activities visually dominate the characteristic landscape but vegetative and landform alterations must borrow visual characteristics that naturally occur within the surrounding area.

V. Effect of human activities visually dominates the natural landscape, but the visual characteristics of the alteration must appear to be of natural occurrence only when viewed in the background. When seen in the foreground or middleground, they may not appear at all natural.

VI. Landscape alterations totally dominate the natural landscape and appear unnatural when viewed at any distance and in stark contrast to surrounding natural features

visual quality index (VQI)

A numerical rating of scenic quality that reflects both the condition of the landscape and the acreage of land in each of the six condition levels ranging from Type I which appears to be untouched by human activities to Type VI where changes in the landscape appear to be drastic disturbances and are in glaring contrast to the natural appearance.

visual quality objective (VQO)

A set of measurable maximum levels of future alteration of a characteristic landscape. These levels are as follows:

1. Preservation (P). Ecological change only here

2. Retention (R). Human activities are not evident to the casual Forest visitor.

3. Partial Retention (PR). Human activity may be evident but must remain subordinate to the characteristic landscape.

4. Modification (M). Human activity may dominate the characteristic landscape but must, at the same time, follow naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

5. Maximum modification (MM) Human activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

6. Enhancement (E). A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists.

visual quality objective, initial (IVQO)

A visual quality objective developed from an inventory which followed the standard Forest Service procedures outlined by Agricultural Handbook 462 and Regional FSM 2380 supplements. It sets a goal for how the landscape should look based on predictions of the amount of landscape alteration that would be generally acceptable to the public. It is developed without consideration of other competing resource values.

The initial VQO's are derived by combining indexes quantifying the public's concern for scenic quality (sensitivity level); the diversity of natural features (variety class); and distance zones (foreground, middleground and background)

Initial VQO's are not current landscape management direction. FSM 2300, Supplement 147 specifies that they will be used as management guidelines prior to approval of a Forest Plan, wherever landscape management is not covered by existing unit plans.

visual sensitivity levels

Sensitivity classification is based on the level of importance of travel routes, use areas, and water bodies from which areas can be seen. There are two levels of importance, generally; Primary-National importance, high use volume, short use duration. Secondary - local importance, low use volume, short use duration. The sensitivity levels are: Level 1 - all seen areas from primary and secondary use areas where at 1/4 of the primary area users and 3/4 of the secondary area users have major concern for scenic qualities. Level 2 - all seen areas from primary and secondary use areas where less than 1/34 of the primary areas users and 1/4 to 3/4 of the secondary area users have major concern for scenic qualities

W

water influence zone

Areas oriented to outdoor water recreation

water rights

A right to use water surplus to other previously prescribed uses and needs according to State and Federal law for beneficial uses.

watershed (drainage basin, catchment basin, river basin)

The total area above a given point on a stream that contributes water to the flow at that point.

watershed condition

The quality status of a watershed as defined by its soil stability, site and productivity, water flow and quality, and aquatic and wetland habitats.

water yield

The runoff from a watershed, including ground-water outflow, over a given period of time. Water yield is precipitation minus evapotranspiration.

water yield increase

The additional amount of water yielded by a watershed due to an increase in precipitation and/or a decrease in evapotranspiration

wetland

Those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.

wild and scenic river

Those rivers or sections of rivers designated as such by congressional action under the 1968 Wild and Scenic Rivers Act, of those sections of rivers designated wild, scenic, or recreational by an act of the legislature in the state or states through which they flow.

wilderness

Briefly, under the Wilderness Act of 1964, wilderness

is undeveloped Federal land without permanent improvements or human habitation;

is protected and managed so as to preserve its natural conditions,

has outstanding opportunities for solitude or primitive recreation;

has at least 5,000 acres or is of sufficient size to make practical its condition; and may contain features of scientific, educational, scenic, or historical value, as well as ecologic and geologic interest.

wildfire

An unplanned fire requiring suppression action.

Wildlife and Fish Habitat Relationships (WFHR)

A system for organizing information about wildlife and fish species, their habitats, and relationships between them which is used in land and resource management planning to

set standards and guidelines, evaluate species and habitat diversity, identify special habitat needs, etc.

wildlife and fish user day (WFUD)

Any portion of a day spent participating in an activity involving wildlife or fish.

wildlife habitat diversity

The distribution and abundance of different plant and animal communities and species within a specific area

window

A critical segment of terrain through which rights-of-way could pass in traversing from points of origin to destination. A combination of circumstances favorable for *the* purpose: a fit time or occasion.

withdrawal

Withholding land from settlement, sale, location, or entry under general land laws, including mining laws, to limit activities under those

laws so as to maintain other public values or to reserve the area for a particular public purpose or program.

X

Y

yield table

Atabular statement of timber volumes expected to be produced under a specified set of conditions.

young growth (timber definition)

Trees or stands of trees less than 150 years of age.

Z



United States
Department of
Agriculture

Forest
Service

Pacific
Southwest
Region

Tahoe
National
Forest



Record of Decision

Tahoe National Forest Land and Resource Management Plan



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RECORD OF DECISION ** USDA-FOREST SERVICE

Final Environmental Impact Statement
Tahoe National Forest
Land and Resource Management Plan

Nevada, Placer, Plumas, Sierra, and Yuba Counties, California

I. DECISION

It is my decision to adopt the Preferred Alternative as presented in the FEIS and Land and Resource Management Plan (Forest Plan) for the Tahoe National Forest (the Tahoe) as modified to accommodate furbearer (i.e., pine marten, fisher, and Sierra Nevada red fox) habitat needs based on current information and as set forth in Forestwide Standard number 23. This modification is described in the Timber Section on page 3 and the effects are described in Section IV 'Rationale for the Decision and Response to Public Comment', starting on page 10 of this Record of Decision. The Tahoe has initiated a new inventory to refine potential suitable habitats for furbearers. Therefore, I am directing the Forest Supervisor to complete the furbearer habitat inventory, to refine furbearer habitat requirements, and, as needed, to refine management direction. Completion of the new inventory may take several years and may result in a Forest Plan amendment.

The Preferred Alternative, as modified, will provide management direction on the Tahoe over the next ten to fifteen years. The Preferred Alternative was developed in response to public comment to the draft Environmental Impact Statement (DEIS) and Draft Forest Plan and is described in detail in the final Environmental Impact Statement (FEIS) and Forest Plan. Over the past ten years, the Tahoe has completed a detailed study of its lands, resources, and social and economic interests. Eleven alternatives were analyzed in the DEIS and, based on the public's response, were combined, modified, or dropped, resulting in the six management alternatives analyzed in the FEIS for the Tahoe's Land and Resource Management Plan.

This Record of Decision summarizes the principal management objectives of the Forest Plan and the rationale for my decision.

II. MAJOR PROVISIONS OF THE TAHOE LAND AND RESOURCE MANAGEMENT PLAN

The Forest Plan protects and enhances the environmental, recreational, and wildlife benefits provided by the Tahoe while maintaining approximately the same level of livestock use and about a 10 percent reduction in timber harvest from that which has occurred annually over the last 10 years. The major provisions of this Forest Plan are summarized below.

Recreation

The quality of the recreation experience will increase on the Tahoe as the Forest is managed at higher standards of maintenance. Recreation opportunities will also increase as investments for new site construction and reconstruction are made.

New recreation facilities will be constructed primarily around reservoirs and in the proximity of stream courses to enhance boating, water skiing, fishing, camping, and swimming. Riparian areas will be protected and interpretive programs may be provided.

Sites Identified for Possible Development

Boca Reservoir
Stampede Reservoir
Jackson Meadow Reservoir
Bullards Bar Reservoir
Truckee River area

Prosser Creek Reservoir
French Meadows Reservoir
Sugar Pine Reservoir
North Yuba River area
Interstate 80 corridor

The trail system will be enlarged and trailheads will be developed. About 70 miles of trails will be constructed or improved during the planning period (10-15 years). The trails will provide for hiking, equestrian, and off-highway vehicle (OHV) use.

The Western States Trail and Tevis Cup Trail will be established as National Recreation Trails when rights-of-way have been obtained. The Forest Plan provides for management activities to be designed to maintain the overall character of the Trails.

The expansion of existing alpine skiing facilities is allowed by the Forest Plan. Decisions to permit expansion of specific areas will be made through master plan development and project-level environmental analysis. The Forest Plan keeps the option open for considering a winter and/or summer resort in the Mt. Lola area. If a viable proposal is received, a project-specific environmental analysis would be prepared with public and other agency involvement. The area is currently managed for dispersed recreational activities such as hiking, cross-country skiing, snowmobiling, and horseback riding.

OHV use is managed in accordance with direction described in the Forest Plan. The Forest Plan also incorporates the existing 1983 OHV plan where it is consistent with the other allocations and direction in the Forest Plan. A new, more detailed OHV plan, will be developed with public involvement during implementation of the Forest Plan. This OHV plan will designate a specific road and trail system consistent with the more general management direction established by the Forest Plan. The OHV plan will be completed and implemented within 18 months of the signing of this Record of Decision. Until then, the Forest Plan will govern OHV use on the Forest.

As in the past, summer OHV activity is authorized on system roads and designated OHV routes. Some areas have been changed from 'open' (with no restrictions), to 'designated roads and trails only.' Much of the high country along the Sierra Crest and the high elevation lands between Sierra and Plumas Counties are included in the "designated roads and trails only" category. OHV uses in areas that have highly erodible soils or where OHV use conflicts with other resource uses will also be provided in the "designated roads and trails only" zones.

Some area closures are decided as a result of the Forest Plan allocations and direction. Areas closed to all OHV use as a result of the decisions in this Forest Plan include, but are not limited to, Placer County Big Tree Grove, Special Interest Areas such as the Sagehen Headwaters Ecosystem Study Area, recommended Research Natural Areas, and areas designated for non-motorized recreation. Other closures for specific resource protection will continue to be decided on a case-by-case basis during Plan implementation and will be decided by Forest Supervisor Order. Other areas like the Granite Chief Wilderness have been and will continue to be closed to OHV use. No new decision is being made.

The remainder of the Forest will remain open. Almost all suitable terrain is open to snowmobile use. An OHV map is included in the Forest Plan map package and provides additional detail.

Wild, Scenic, and Recreation Rivers

The existing management plan for the North Fork American Wild River, approved October 3, 1979, will continue in effect to guide management activities within the Wild River boundaries.

An eligibility assessment was completed for rivers included in the Nationwide Rivers Inventory, rivers recommended by the public, and rivers identified by the Forest Supervisor. Rivers evaluated included the Middle Yuba River, South Yuba River, Canyon Creek, Lavezzola Creek, North Fork of the Middle Fork American River, and the Middle Fork American River.

The Middle Yuba River and South Yuba River were found to meet the eligibility standards for possible classification as Wild, Scenic, or Recreation rivers. These rivers will be protected to keep the appropriate options open until a suitability study is completed and a decision on classification is made. The other rivers evaluated, including Canyon Creek, Lavezzola Creek, North Fork of the Middle Fork American River, and the Middle Fork American River, did not have outstandingly remarkable scenic, recreational, geological, fish and wildlife, historical, cultural, or ecological values. Therefore, they were judged not to be eligible for inclusion in the Wild and Scenic River system.

The Upper Truckee River and the Upper Rubicon Rivers will be studied cooperatively with the Lake Tahoe Basin Management Unit and the Eldorado National Forest, respectively, for eligibility.

Timber

The average annual allowable sale quantity (ASQ) is 129 MMBF based on the capability of forest lands and the need to maintain habitat for furbearers well distributed throughout their range. Timber sale offerings have averaged about 142 MMBF over the past ten years.

The 129 MMBF represents about a 13 MMBF reduction from that projected in the Preferred Alternative. This reduction is based on a preliminary analysis of the effects on the timber supply using existing information on projected needs for furbearer habitat. Once the inventory of furbearer habitat is completed and areas with furbearers identified, the Forest Plan may be amended. Although it is possible that the reduction could be less than 13 MMBF, it could be somewhat higher, and may be as high as 25 MMBF.

Additionally, another 16 MMBF of the Plan ASQ of 129 MMBF is composed of volume coming from areas that are highly controversial, such as former roadless areas and spotted owl habitat areas. If the volume in these components is not available within five years, the Forest Plan may be amended.

Timber harvest will occur on about 7,600 acres a year. Clearcutting is projected on about 2,000 acres a year in the first decade. The conventional type of clearcutting where all trees are removed will be used only where there are no practical alternatives. For example, complete tree removal may still be needed to control some insect and disease problems such as mistletoe or bark beetle infestations. Silvicultural treatments will be developed at the project level based on specific conditions and concerns. Timber harvest in most clearcuts will result in a 'regeneration mosaic' that will leave significant amounts of young conifers, hardwoods, snags, and downed logs to meet diversity, wildlife, and soil protection objectives. Cutting units near roads will be designed to retain their natural appearance. About 1,700 acres of shelterwood cutting per year and 3,500 acres of salvage/sanitation and thinning are also planned. The remaining 400 acres will be treated through uneven-aged practices such as single tree and group selection and special cutting timber practices.

The Tahoe will implement uneven-aged management practices primarily on five timber compartments (one on each Ranger District) which represent the major timber types on the Forest. Activities will be carefully monitored and evaluated as specified in the Monitoring Plan. The results will be shared with the public.

Tree planting will remain as the major reforestation practice in clearcuts and will be supplemented by protecting existing young trees as possible during the logging and site preparation activities. The Forest Plan calls for 3,900 acres of reforestation and 12,500 acres of timber stand improvement annually (thinning and release). In some shelterwood areas and in areas planned for uneven-aged management, regeneration by natural seeding is the desired method of reforestation. Supplemental planting will be done if necessary.

Riparian Areas

The Forest Plan emphasizes protection and improvement of riparian areas and streamside management zones (SMZs). These areas will be managed for wildlife and fish habitat, vegetation diversity, water quality, flood and sediment control, stream channel stability, and scenic quality. Some activities permitted in riparian areas and SMZs include:

- vegetation treatments for the benefit of riparian-dependent resources, control of insects and disease, and removal of trees threatening public safety,

- livestock grazing systems compatible with protecting riparian-dependent resources; and
- occasional tree removal in skyline logging corridors and road and trail crossings

New facilities in riparian areas and SMZs will be limited and subject to site specific analysis. Undeveloped camping areas that currently adversely affect these areas will **be** managed to reduce impacts

Soil

The Forest Plan includes a newly developed standard to maintain soil productivity by setting thresholds in activity areas for soil attributes such as porosity, organic matter, and soil loss . The Forest Plan also contains a monitoring program that will ensure that the standards are implemented and are effective in maintaining soil productivity.

Water Quality and Quantity

The Forest Plan emphasizes the protection of water quality through implementation of Best Management Practices and streamside management zone standards presented in this Forest Plan. Remedial actions will be taken during the first two decades to eliminate the backlog of historically disturbed or damaged watersheds resulting from early day mining activities at a rate of approximately 100 acres per year. Restoration of degraded riparian and streamside management zones is a high priority. The Forest Plan contains a monitoring and evaluation program to determine that water quality objectives are met

Special Interest Areas (SIAs)

Seven areas are established as Special Interest Areas:

- Placer County Big Tree Grove Botanical Area (346 acres), which contains a unique grove of giant sequoias and represents the northernmost natural occurrence of these giant trees in the Sierra Nevada;
- Devils Postpile Geological Area (69 acres), which contains a large vertical pillar of basalt rock rising above the surrounding landscape;
- Glacier Meadow Geological Area (84 acres), a distinctive and unusual glaciated landscape of scoured and polished granite overlain by large boulders;
- Grouse Falls Scenic Area (220 acres), one of the highest cascading falls in California,
- Sagehen Headwaters Ecosystem Study Area (79 acres), which is located in a glaciated cirque basin, is noted for its rich diversity of plant and aquatic species,
- Meadow Lake Cultural Area (**58** acres) contains the remnants of the former boom-and-bust gold mining town of Summit City and extensive evidence **of** prehistoric **use**, and
- Mason Fen Ecosystem Study Area (30 acres), which contains a large minerotrophic peatland (fen), springs, and spring habitats and is used for current research

Activities within **SIAs** are designed to preserve these areas and the attributes that make them special

Research Natural Areas (RNAs)

Babbitt Peak (representing Washoe pine), Sugar Pine Point (representing mixed conifer), and Lyon Peak/Needle Lake (representing mountain hemlock) are recommended for Research Natural Area status. The Chief of the Forest Service makes the decision whether to designate Research Natural Areas. Designation of these areas will complement and enhance the National RNA System

Wilderness and Former Roadless Areas

Ten roadless areas were identified in the 1979 Roadless Area Review and Evaluation (RARE II). The California Wilderness Act of 1984 designated Granite Chief as Wilderness. The remaining roadless areas were released for other multiple **uses** for this planning period. The Forest Plan provides for a mixture of management prescriptions for these former roadless areas.

- 1 Granite Chief Area (25,975 acres). The 1984 California Wilderness Act designated 18,705 acres, or **74** percent, of the Granite Chief Roadless Area as Wilderness. A Wilderness Management Plan will be developed to guide management for the new Wilderness. The remaining area is managed primarily for semi-primitive nonmotorized recreational opportunities (4,420 acres), for timber emphasis along the western boundary (2,150 acres), and as the Lyon Peak/Needle Lake Research Natural Area (700 acres).
- 2 Castle Peak Area (9,301 acres). Castle Peak is managed to emphasize recreation. Of the total, 93 percent will **be** managed for semi-primitive nonmotorized recreational opportunities and 7 percent for more highly developed motorized recreation, including downhill skiing. Summer OHV use will **be** permitted on 'designated routes only'.
- 3 Grouse Lakes Area (10,096 acres). Most of the Grouse Lakes area (90 percent) is managed for semi-primitive nonmotorized recreational opportunities. An additional 3 percent is managed for semi-primitive motorized opportunities. The remaining 7 percent of the area emphasizes a mix of different resources including timber and grazing.
4. Lakes **Basin** Area (551 acres): All of the Lakes Basin area on the Tahoe is managed for semi-primitive motorized recreational opportunities.
5. Bald **Mountain** Area (6,253 acres). Management of most of the Bald Mountain area emphasizes timber and range resources (85 percent). The remaining 15 percent is managed as a Research Natural Area (Babbitt Peak).
- 6 West Yuba Area (16,601 acres): About 30 percent of the area is managed for semi-primitive motorized recreational opportunities and another 30 percent is managed for roaded natural recreational and timber management with an emphasis on visual quality. Management of the remaining 40 percent will emphasize timber.
7. Duncan Canyon Area (8,703 acres). A small area (**7** percent) of Duncan Canyon is managed for semi-primitive nonmotorized recreational opportunities near Robinson Flat. The rest of the area (93 percent) is managed with an emphasis on timber management.
- 8 North Fork of the **Middle** Fork American River Area (10,653 acres). Most of this area (90 percent) is managed for semi-primitive motorized recreational opportunities. About 2 percent is managed as a Special Interest Area at Grouse Falls. Another 5 percent has a fish and wildlife habitat emphasis while still allowing for commodity production in the southernmost part of the area. The remaining 3 percent of the area has an emphasis on visual quality as seen from major highways.
9. North Fork American River Area (34,275 acres). The majority of the North Fork area is managed for primitive and semi-primitive nonmotorized recreational opportunities. The Wild River corridor (17 percent of the area) is managed for primitive recreational opportunities. Forty-eight percent of the area on both sides of the Wild River corridor is managed for semi-primitive nonmotorized recreational opportunities. An additional **17** percent in the Loch Leven and Long Valley areas is managed for semi-primitive motorized recreational opportunities. Sugar Pine Point (two percent of the area) is managed as a Research Natural Area. The upper slopes of the south side of the North Fork American River Canyon (16 percent of the area) are managed with an emphasis on timber and range resources.
10. East Yuba Area (18,502 acres). Almost half (**48** percent) of the East Yuba area is managed for semi-primitive motorized recreational opportunities. The remaining area is managed for timber with 32 percent having an emphasis on timber management and visual quality, and 20 percent emphasizing a mix of timber and range management.

In addition to the RARE II areas mentioned above, the Middle Yuba Area was identified as roadless in RARE I. It will be managed as follows:

Middle Yuba Area (**7,855** acres): Over three quarters (**76** percent) of the Middle Yuba is managed for semi-primitive motorized recreational opportunities. The remaining 24 percent of the area emphasizes timber management.

Wildlife and Fish

Viable populations of fish and wildlife are maintained through implementation of Forestwide standards and guidelines and the implementation of Appendix D of the Forest Plan.

The Forest Plan also provides for plant and animal diversity by retaining at least five percent of each seral stage of the major vegetational types. Limited areas of old growth outside of the Granite Chief Wilderness contain potentially suitable habitat for furbearer species (i.e., fisher, pine marten, Sierra Nevada red fox). Late in the Tahoe's planning process, additional analysis of furbearer habitat was examined based on public comments since the issuance of the DEIS. As a result of this analysis, the Tahoe will manage to meet furbearer habitat requirements as prescribed in Forestwide Standard number 23 and Appendix D of the Tahoe's Final Forest Plan. Analysis of furbearer habitat is ongoing, and the results will be incorporated into the Forest's habitat management programs for all species and groups as identified in Appendix D of the Final Forest Plan. The decisions in this Record of Decision do not foreclose maintenance of well distributed, viable populations of furbearers while their needs are further analyzed during Plan implementation.

Harvest species including deer and fish are emphasized by implementing habitat improvement projects on key habitats. Fisheries habitat and key wildlife habitats are protected through implementation of standards for riparian areas and streamside management zones, hardwoods, snags, and retention of down logs. The Forest Plan initiates a multi-year fish habitat assessment program, and development of stream basin improvement plans, resulting in riparian plantings, seeding, and structural improvements to increase fish cover, shelter, and spawning areas.

As specified in Appendix D of the Forest Plan, habitat management programs will be developed for threatened and endangered species, sensitive species and species of special interest in cooperation with the California Department of Fish and Game. Protection and improvement of Lahontan cutthroat trout habitat will be provided in accordance with the Endangered Species Act and the Lahontan Cutthroat Trout Management Plan. There will be a network of 33 spotted owl habitat areas (SOHAs) to provide for the viability of the spotted owl. Under this design, 4 of the 33 SOHAs are managed under an uneven-aged management scheme, 7 SOHAs under even-aged management, and the remaining 22 SOHAs have no scheduled harvest. A management plan will be developed for each SOHA. Spotted owl research is being conducted on an interregional basis. As information is developed regarding spotted owls, the Forest will consider the need for change in the Forest's current strategy.

Visual Resources

Visual quality is determined by establishment of visual quality objectives (VQOs). Alteration of the natural landscape in areas managed primarily for timber is permitted. In comparison with existing direction, the Forest Plan provides for a higher VQO along major highways, at recreational sites and reservoirs, along secondary roads with heavy recreational use, and from vistas overlooking the North Fork American Wild River corridor. Timber harvesting, ski area development and expansion, and other activities will be carefully designed to achieve the adopted VQOs.

Air Quality

The Tahoe will comply with the appropriate Federal, State, and local air quality standards.

Fire and Fuels Management

All wildfires will receive a prompt, appropriate response. The opportunity to utilize prescribed natural fire to meet resource objectives is limited on the Tahoe National Forest due to intermingled private lands, high resource values, and/or continuous fuels. There may be some opportunities for prescribed natural fire in the Granite Chief Wilderness and the North Fork American Wild River area. However, unplanned ignitions will not be used prior to adequate analysis and the development and approval of site-specific plans.

We will cooperate with local and State agencies, and local homeowners, in their development of land use or General Plans and the development of 'fire safe' guidelines. Fire prevention, suppression, and fuels management will be emphasized to reduce the potential for a large destructive fire in urban/rural/wildland interface situations

Wood residue from timber harvest operations will be utilized whenever practical. Prescribed fire, when used to dispose of harvest residues on steep and sensitive slopes, will be carefully designed and managed to protect other resources such as soil productivity, water quality, wildlife habitat and residual stands of small trees.

Grazing

Livestock **use** will continue at about the current level for the **next** decade, which amounts to 20,800 Animal **Unit** Months (AUMs) per year. Range management emphasis is on improving ecological conditions, particularly in riparian areas. Any increases in forage will come from two sources

- the transitory range resulting from the timber harvest program, and
- intensive range management practices

Land Adjustments

Emphasis will be placed in the land adjustment program on acquiring lands important for wildlife habitat and recreation through purchases or exchanges. Generally, National Forest System lands will be retained. Land adjustments will only be considered on a case-by-case basis determined by management needs and public values.

Surveys, Access, and Trespass

Surveying and marking of property lines between National Forest System lands and other ownerships will continue where needed to accomplish National Forest objectives, with a high priority placed on resolving unauthorized occupancy and **use** disputes. Emphasis will be placed on obtaining rights-of-way for public access (roads and trails)

Transportation and Utility Corridors

The Interstate 80 transportation and utility corridor is established by the Forest Plan. The Granite Chief Wilderness, North Fork American Wild River, Onion Creek Experimental Forest, Special Interest Areas, and recommended Research Natural Areas are not available for utility corridor designation. Proposals for additional corridors will be studied through a separate project environmental analysis process

Minerals

The Forest Plan contains direction for responding to mining proposals in a manner that facilitates development while minimizing adverse impacts to the surface resources.

The Forest Plan requires that all plans of operation, leases, and prospecting permits contain appropriate reclamation treatment. The Forest Plan identifies the need to withdraw Special Interest Areas, Research Natural Areas, and portions of scenic highway corridors not already withdrawn from mineral entry

III. ALTERNATIVES CONSIDERED

A. Description of the Tahoe National Forest

The Tahoe National Forest, in the north central Sierra Nevada, encompasses 1,175,535 acres, of which 794,374 acres are National Forest System lands, and 381,161 acres are in other ownerships. Most of the lands in other ownerships are in an alternate section (checkerboard) pattern. About 253,425 acres (32%) of the National Forest System Lands were acquired through purchase, donation, or exchange within the past 50 years. Within the Tahoe are 28,833 acres which are managed by the Lake Tahoe Basin Management Unit in accordance with its Land and Resource Management Plan.

Interstate Highway 80 crosses the central part of the Tahoe and provides primary access across the Sierra Nevada between Sacramento, California, and Reno, Nevada. Today, an estimated eight million residents live within a four-hour drive of the Tahoe. This large, urban population increases the demand for all types of recreational activities, utility rights-of-way and other permitted uses, and fuelwood. Major attractions include the Placer County Grove of Sierra Redwoods, the North Fork American Wild River, Granite Chief Wilderness, Donner Camp, the historic Overland Emigrant Trail from Verdi to the Sacramento Valley, and numerous winter sports areas and reservoirs.

Major Forest vegetation types on the Tahoe are the mixed conifer forest, high elevation true fir, and eastside pine. The western slope of the Tahoe contains numerous historic mining sites, some dating back to the 1860s, which created an early heavy demand for timber. Due to this early demand, much of the Tahoe today is characterized by young growth stands of timber 80 to 90 years old, which supply local mills in Butte, Nevada, Sierra, Plumas, Yuba, and Placer counties in California and Douglas County, Nevada. This early logging created a mosaic pattern of age classes of vegetative types that contributes to a large variety of wildlife species.

The demand for timber, recreation, and wildlife on the Tahoe results in increased resource conflicts. After 80 years of effective multiple-use management by the Forest Service, the Tahoe is an environmentally sound and highly productive National Forest that contributes to the social, economic, and environmental needs of society. Management under the Tahoe's Plan will continue the mosaic of uses already established.

B. Public Involvement

The Tahoe began seeking public comment to this plan on August 18, 1979 with publication of a Notice of Intent in the Federal Register. Notices were also published in local newspapers and in the Tahoe Planner Newsletter. Meetings to determine the major public issues and concerns were then held during the following year in Sacramento, Nevada City, Auburn, Downieville, Sierraville, Reno, and Truckee. Some 50 people attended and spoke out at these meetings; in addition, some 80 written responses were received by the Tahoe. In November 1983, in response to litigation of the Roadless Area Review and Evaluation (RARE II), another meeting was held in Nevada City attended by over 50 people, 60 written responses were also received.

The Tahoe received over 12,000 letters in response to the 1986 DEIS and Draft Forest Plan. When the DEIS was released for public comment, eight local meetings were held to introduce the Draft Forest Plan. Over 500 people attended these Orientation meetings. Later on in the comment period, open houses were held at each Ranger District to further explain the documents and answer questions. Approximately 46 people attended these open houses. In addition, Forest representatives discussed the Draft Forest Plan at various meetings with local civic groups. Toward the end of the comment period three public hearings were held in Truckee and Grass Valley. Over 375 individuals attended these hearings and 188 presented testimony to the Forest Supervisor. These comments, which provided helpful insight into public concern were carefully considered as the Tahoe sought to resolve key issues. Details on the Tahoe's efforts to seek public comment are included in FEIS Appendix A, and in the planning records available to the public at the Forest Supervisor's Office.

The major public issues and concerns raised from review of the DEIS and Draft Forest Plan are discussed in Section V A of this Record of Decision. A more detailed discussion of these planning issues can be found in Chapter IV of the Forest Plan, and Appendix A of the FEIS. Table 2.21 in the FEIS summarizes how each issue is addressed in each alternative.

C. Alternatives

The FEIS and Forest Plan were developed under the implementing regulations of the National Forest Management Act (NFMA), Title 36, Code of Federal Regulations, Part 219 (36 CFR 219) published in 47 FR 43026 on September 30, 1982. The planning actions described in 36 CFR 219.12(b) through (k) have been completed and are properly documented. The National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508) were also followed. In addition, the Forest Plan preparation was guided by the Regional Guide for the Pacific Southwest Region, dated August 1984, as well as many other laws and regulations.

In response to planning issues, concerns, legislation, and regulations, a range of alternatives was developed and analyzed in the DEIS. Each alternative reflected a different resource management emphasis. Forestwide standards and guidelines were developed to assure careful management of all resources. More information on this process can be found in Chapter 2 of the FEIS.

The public review of the DEIS and Draft Forest Plan helped focus on the major issues. As a result, the Tahoe reevaluated the 11 alternatives in the Draft, modified some, and combined others to come up with the six alternatives considered in the FEIS. The FEIS alternatives clearly address the major issues and are within the spectrum of alternatives discussed in the Draft.

Public review and comment also helped identify changes or additions to the Forestwide standards and guidelines, and to the proposed Management Area direction in the Forest Plan. The Forest Plan has been revised in response to this public comment.

The use of herbicides is assumed in all alternatives with the exception of the Nonmarket Alternative. For a complete discussion of the differences among alternatives and their effects, *see* Chapters 2 and 4 of the FEIS.

Preferred Alternative (PRF)

The Preferred Alternative in the Draft was modified as a result of public comments and additional analysis to become the Preferred (PRF) Alternative in the FEIS. I have further modified it in this Record of Decision as stated in Section I on page 1. This alternative provides for increased recreation emphasis. It will increase the level of environmental protection over the current program while maintaining grazing outputs near existing levels. Timber outputs will be about 13 MMBF less than current levels. The Preferred Alternative, as modified, establishes a high level of protection for wildlife, riparian areas, soil productivity, water quality, and visual quality. The alternative provides for a mix of resource uses in former roadless areas, the highly productive lands are managed for timber, and those lands with high recreation values will be managed for a variety of recreation activities. The Preferred Alternative provides for the expansion of existing winter sports areas and development of new winter sports areas. As a result of the modification to provide for furbearer habitat, the allowable sale quantity (ASQ) as described in the FEIS has been reduced about 13 MMBF to 129 MMBF through five decades.

Current Management (No Action) Alternative (CUR)

The No Action alternative remains unchanged from the DEIS. This alternative continues the current direction, policies, and practices as of 1982. Timber, grazing, and other goods and services are provided at existing levels. A mix of recreational opportunities is also provided. Standards implemented for the CUR Alternative provide for basic protection of soil productivity and water quality. All issues are addressed to the extent allowed by current direction and budget. All former roadless areas are available for uses other than wilderness. Expansion of existing ski areas is provided. New ski area development is evaluated on a site-specific basis. The ASQ is projected to be 173.4 MMBF increasing to 193.7 MMBF by the second decade and remaining constant through the fifth decade. Recent actual timber sale offerings have averaged about 142 MMBF annually.

1980 RPA Alternative (RPA)

This alternative, unchanged from the Draft, achieves the 1980 RPA program targets assigned to the Tahoe by providing moderately high levels of timber and livestock production with an increase in campground facilities. All unroaded areas are available for timber management activities on productive timber lands. Expansion of existing ski areas is provided. New ski area development is evaluated on a site-specific basis. Standards implemented for the RPA Alternative provide for minimum protection of soil productivity and water quality. The ASQ is 173.0 MMBF increasing to 186.0 MMBF in the second decade, to 198.4 in the third decade, and then remaining constant through the fifth decade.

Commodity Alternative (CMD)

Alternative I as described in the Draft is modified and emphasizes timber production, livestock grazing, and recreational camping. All unroaded areas are entered within the first decade. Standards implemented for this alternative provide for minimum protection of such resources as riparian and streamside zones, viable wildlife populations, water quality, soil productivity, and visual quality. Expansion of existing ski areas is provided. New ski area development is evaluated on a site-specific basis. The ASQ is **180.1** MMBF in the first decade increasing to **184.8** MMBF, **189.6** MMBF, **194.5** MMBF, and **196.9** MMBF in succeeding decades.

Nonmarket Alternative (NMK)

This alternative emphasizes protection of the natural environment and recommends that all inventoried roadless areas plus the Lafayette Ridge area in Sierra County remain without roads. Recreation opportunities that protect amenity values are emphasized. These activities include hiking, cross-country skiing, and nature study. Expansion of ski areas is limited to existing developments, no new areas are developed for downhill skiing. Grazing and timber production are immediately reduced from current levels. This alternative provides for a level of protection higher than current levels for wildlife, riparian areas, soil productivity, water quality, and visual quality. The ASQ is **104.9** MMBF through five decades.

Uneven-aged Alternative (UNE)

This alternative provides for the same land allocations, the same direction for environmental protection, and the same grazing and recreation outputs as the Preferred Alternative. The major difference is that this alternative utilizes uneven-aged timber management to produce 50 percent of the timber volume. The ASQ is **110.8** MMBF increasing to **114.5** MMBF by the second and third decades, with a drop to **114.4** MMBF in the fourth and fifth decades.

IV. RATIONALE FOR THE DECISION AND RESPONSE TO PUBLIC COMMENT

Authorities for the Forest Service are found in the many laws enacted by Congress and the regulations and administrative directives that implement these laws. The major laws which govern Forest Service programs include:

1. Organic Administration Act of **1897**.
2. Title III, Bankhead-Jones Farm Tenant Act of **1937**.
3. Multiple Use-Sustained Yield Act of **1960**
4. Forest and Rangeland Renewable Resource Planning Act of **1974**
5. National Forest Management Act of **1976**
6. Cooperative Forestry Assistance Act of **1978**.
7. Forest and Rangeland Renewable Resource Research Act of **1978**

The mission of the USDA Forest Service as it pertains to the Tahoe is to provide a continuous flow of natural resource goods and services to help meet the needs of the Nation by

1. Making the renewable resources of the National Forest System fully productive to provide a sustained flow of outdoor recreation, forage, wood, water, fish, wildlife, and wilderness.
2. Administering the minerals and energy resources of the National Forest System to help meet the Nation's needs in a manner consistent with other resource values
3. Providing opportunities for human development and work programs
4. Communicating with the public about the management of natural resources.

The decisions contained in this Record of Decision guide the Tahoe's contributions to accomplishing the mission and objectives of the USDA Forest Service

The Tahoe is, and has been, an important source of timber for local industries and ultimately for the residents of California. The Forest also contains highly valuable recreation lands and habitats for a wide variety of both game and non-game wildlife and fish species. Conflicts for use of these resources have increased dramatically over the past 10 years, as evidenced by the massive public response to the Draft Forest Plan. Based on this past experience, I expect that the intensity of controversy will continue to increase over the next 10 to 15 years

In selecting the Preferred Alternative, as modified, I considered both monetary and non-monetary costs and benefits, the capability of the land and the need for protection of resources as evaluated in the FEIS, concerns expressed by people interested in the Forest, advice received from other agencies and resource professionals, and the legislative mandate of the Forest Service. National, Regional, State, and local objectives were considered in making the decision.

The Preferred Alternative, as modified, provides the mix of resource activities that I consider most appropriate for existing and projected conditions on the Tahoe. I have reviewed the furbearer issue and believe, based on current information, that we must take action, as set forth in Forestwide Standard number 23, to protect these sensitive species. I recognize the quality of our existing data regarding furbearers is limited, but it is clear that the need to provide for furbearer habitat will have some effect on the Forest's timber supply. Although the exact impact on the ASQ can only be determined after the new habitat inventory is completed, I have decided to reduce the ASQ by about 13 MMBF to 129 MMBF. This reduction represents my best judgment of the effects based on existing, current information and data.

I have decided to approve the Tahoe Forest Plan with this modification rather than wait the 3-5 years that will be needed to complete the inventory, develop management prescriptions, and establish specific areas for furbearer habitat. Forest planning is a dynamic process that provides for incorporating changes as new issues develop and as new and better information is collected. Furbearer habitat is only one of many issues in this Forest Plan. I believe it is important to implement the many decisions in this Forest Plan without any further delay. The management direction and standards and guidelines presented in the Preferred Alternative, as modified, and Forest Plan provide the basis to manage the Tahoe National Forest.

The modified ASQ of 129 MMBF is about 13 MMBF less than the average sale offerings over the past 10 years. This ASQ reduction will somewhat affect economic benefits. Assuming no changes in prices paid, the returns to the Treasury and County receipts will be reduced 6 and 7 percent respectively, and a 3 percent reduction in employment (person years) can be projected with the reduction. At the same time, positive benefits will occur to wildlife requiring dense, closed canopy forests, such as furbearers and spotted owls. There will also be a slight improvement in visual quality and water quality. The response to the Draft Forest Plan clearly indicated the public's concern for management and protection of the recreation and amenity resources, including wildlife, of the Forest. I agree that a need exists to provide increased protection to riparian and streamside areas: to provide for wildlife habitats by maintaining hardwoods, snags, and meadow edges; and to provide for visual quality and a range of outdoor recreation experiences. This alternative, as modified, maintains about the existing level of grazing use while protecting soil and water resources. It restores historically damaged watersheds, and maintains soil productivity. All of these resource values of the Tahoe are important to the public. I conclude that the benefits to the public of providing for these amenity values, including our obligation to protect our sensitive, endangered, and threatened species, justifies the reduction in ASQ.

Therefore, for all of the above reasons, I judge the Preferred Alternative, as modified, to have the greatest long-term net public benefit when compared to other alternatives and have selected it to be the management direction for the Tahoe.

Although the Uneven-aged Alternative has a number of benefits, I did not select it because the Preferred Alternative, as modified, provides additional timber volume at a lower cost and also protects and improves other resource values. Classical uneven-aged management designed to achieve high timber yields has not been implemented over large areas for long periods of time. Therefore, high yield uneven-aged management must be tried and tested before being implemented on a large scale. The Tahoe and other forests are testing uneven-aged practices. Major changes in operational and administrative record-keeping systems would need to be developed to implement this alternative.

The Nonmarket Alternative would adversely affect the local communities by reducing the levels of timber supply and grazing **use**. Timber industry related employment would be reduced in the first decade as compared to the Preferred Alternative, as modified. The people dependent upon the Forest to graze their livestock would be especially impacted if this alternative were implemented because grazing **use** would be phased out by the fifth decade. Additionally, this alternative would not be as cost efficient to implement and has the same concerns for implementation described above for the Uneven-aged Alternative.

The Commodity, 1980 RPA, and Current Management Alternatives are not as responsive to public comment as the Preferred Alternative, as modified, because they do not meet the public's need for a variety of high quality recreation opportunities, nor do they maintain the level of visual quality enjoyed by the public. The Tahoe is a major supplier of recreation and provides a wide variety of recreation experiences. These three alternatives, although meeting minimum requirements for riparian areas, soil protection, and diversity for wildlife, do not provide for protection and enhancement of these resources as well as the Preferred Alternative as modified. The comments received on the DEIS and Draft Forest Plan clearly indicated the public's concern and desire for a higher level of protection for riparian areas, soil productivity, and wildlife. On balance, the higher timber outputs of these three alternatives do not outweigh the loss of quality recreation opportunities and other amenity resources.

A. Response to Public Comments and Management Concerns

This Record of Decision reflects the many helpful comments received from agencies, organizations, and the public on the Draft Forest Plan and DEIS. Discussed below are more specific responses to the major public issues raised and further rationale for my decision.

Timber Supply

Issue: The level of timber production and its effects on other resources and the timber industry is a major issue.

Draft Plan: The Draft Forest Plan provided for an ASQ of 178.7 MMBF, although recent timber sale offerings on the Tahoe have averaged about 142 MMBF over the last ten years. Public comment was mixed. Some supported the higher level of timber supply proposed in the Draft Forest Plan, indicating the increase would result in more jobs and economic benefits to the local communities. Other people thought the sale level was too high and would result in adverse impacts to soil productivity, water quality, visual quality, and wildlife.

Final Plan Response: The Forest Plan recognizes the importance of noncommodity resources while retaining a relatively broad land base for a variety of extensive and intensive timber management practices. The Forest Plan as modified establishes an ASQ of 129 MMBF, or about 13 MMBF below the current level of sale offering. This ASQ reflects a 10 to 15-year average of the maximum regulated volume of timber to be offered on the Forest. The actual sale offerings may be above or below the ASQ in any given year.

Timber management is intertwined with almost every other issue. While some **uses** are compatible with timber production, others such as primitive recreation are not. In many places it is necessary to reduce timber harvests to maintain other values such as fish and wildlife habitat or scenic vistas.

The more productive forest areas are generally allocated for intensive timber management activities. The Forest Plan takes all appropriate measures to mitigate the effects of other resource allocations and prescription constraints on the timber resource. Land allocations that preclude or reduce timber management are carefully evaluated to minimize the effects on ASQ. For example, where feasible, spotted owl habitat areas (SOHAs) were located in the Granite Chief Wilderness, and in areas already constrained for reduced yields.

The Forest Plan provides a combination of even-aged, uneven-aged, and special cutting timber management practices which were selected to address concerns for riparian and streamside zone management, spotted owl, furbearers, and other wildlife habitats, and visual resources. While the harvest will primarily come from mature stands, actual harvest units within these stands will often have small inclusions of younger

timber. The need to disperse the harvest may result in programming some otherwise low priority stands to avoid creating a scheduling problem for the future.

The **ASQ** has been reduced from the Draft by about **49.4** MMBF to provide a higher level of protection for visual quality, dispersed recreation, and key wildlife habitats such as hardwoods, riparian areas, meadow edges, and snags. Should timber demand increase significantly in the future, the ASQ could be increased about one MMBF in the eastside pine. Any further increases would require accepting a decline in protection of other resource values and an amendment or revision of the Forest Plan.

Clearcutting

Issue: The appropriateness and extent of clearcutting on the Tahoe is highly controversial. The clearcutting **issue** received the greatest number of comments.

Draft Plan Response: The Draft Forest Plan projected about 3,800 acres of clearcutting and 1,000 acres of shelterwood annually.

Many comments expressed a great deal of concern about the amount of clearcutting proposed on the Forest and its effect on visual quality and the environment. Some support was received for properly managed clearcutting to produce higher sustained yields of timber, to increase water yield, and to reduce costs.

Final Plan Response: The Forest Plan provides for the continuation of even-aged management, including clearcutting, as one of the methods to harvest timber from major areas of the Forest. An estimated average of 2,000 acres would be clearcut annually. This is a reduction from the amount scheduled in the current Timber Management Plan (2,800 acres) and from that projected in the Draft Forest Plan (3,800 acres). The **use** of shelterwood prescriptions is increased from 1,000 acres to 1,700 acres annually in order to maintain visual quality and to offset potential decreases in harvest levels.

The conventional type of clearcutting where all trees are removed will be used only where there are no practical alternatives. For example, complete tree removal may still be needed to control some insect and disease problems such as mistletoe and bark beetle control. Specific practices are adopted to reduce the potential adverse environmental effects of clearcutting. These practices include,

- protecting residual trees (including hardwoods),
- whole-bole yarding to reduce burning of wood residue,
- developing alternatives to clearcutting in sensitive watersheds, such as areas with shallow soils and steep slopes,
- implementing streamside management zone practices for riparian-dependent resources, and
- carefully designing clearcuts to provide for visual quality and wildlife habitat needs, and to protect soil productivity.

Silvicultural methods selected will be based on a site-specific analysis of vegetation type, topography, other specific site conditions, and public input through the environmental analysis process. Clearcutting may be used when it is determined to be the optimum method in meeting resource management objectives as described above. Clearcutting is an appropriate harvesting method on the Tahoe National Forest because it

- minimizes watershed impacts by concentrating timber harvest on a smaller number of acres;
- assures regeneration of productive timber stands following harvest,
- allows planting of desired species including intolerant species such as ponderosa pine, Jeffrey pine, sugar pine, and Douglas fir,

- minimizes damage to residual timber stands:
- minimizes the risk of damage from insects and diseases through stocking control: and
- provides the most cost effective method

Because of the concern expressed over clearcutting, the Tahoe looked at managing the Forest under an uneven-aged management approach. The Uneven-aged Alternative described in Chapter 2 of the FEIS discusses this approach in detail. The evaluation of uneven-aged management identified benefits and concerns. Benefits may include the enhancement of visual quality, riparian area protection, and the maintenance of soil productivity. The major concerns associated with uneven-aged management include possible impacts on long-term timber yields or growth, decreased ability to control insect and disease outbreaks, increased costs: the need to develop new logging methods and approaches, and the resulting effects on the local timber industry, and the need to develop and manage new administrative systems to track and control stand conditions.

The Tahoe has identified 9,300 acres in five timber planning compartments to be managed primarily using uneven-aged management practices. The gentler slopes, where logs can be removed with tractors, will be managed under an uneven-aged system. Steeper areas needing cable systems to remove the logs will primarily be considered for even-aged management. The five compartments represent all five Ranger Districts and all major forest timber types on the Forest. The information obtained from this program will enable the Tahoe to evaluate the feasibility of increasing the **use** of uneven-aged management practices during the next 10-15 years.

Spotted Owls

Issue This issue focuses **on** the number of spotted owl habitat areas (habitats) prescribed for the Forestwide network and how they should be managed.

Draft Plan. The Draft Forest Plan proposed 39 habitats. Comments varied, ranging from those proposing no habitats to those proposing 80 habitats. There were also some comments as to how the habitats should be managed.

Final Plan Response: In considering the needs **of** the spotted owl, the Tahoe further evaluated the size of the network along **with** the impacts on the timber supply. The Tahoe determined that a forest network of 33 habitats would provide for species viability with least impact to the timber supply. The Forest Plan proposes to manage 22 habitats **with** no scheduled timber harvest, 4 habitats will be managed for timber harvests under uneven-aged management systems: and 7 habitats will be managed under even-aged management. The actual management prescription for each individual habitat will be developed during Plan implementation through an **interdisciplinary** team approach. No harvest or other activity that will adversely affect network spotted owls will occur until a management plan is developed for each individual habitat area.

Viable Populations/**Plant** and **Animal** Diversity

Issue Increasing activities and **uses** have the potential to affect adversely many plant and animal species. Diversity and maintenance of viable populations are major issues.

Draft Plan. To maintain diversity and viable populations **of** native vertebrates, the Tahoe chose a variety **of** species as Management Indicator Species (MIS), in accordance with NFMA regulations, National direction, and Regional direction. The species list in the Draft Forest Plan included threatened and endangered species, sensitive species, and some harvest and special interest species. The Draft Forest Plan included minimum standards for hardwoods, riparian areas, and down logs as well as a Regional standard requiring the retention of five percent **of** each seral stage of the major vegetative types.

A majority **of** the public comment relating to this issue focused on including all species considered rare and/or endangered by the State of California, all Forest Service sensitive plants and animals, and ecological indicator groups for certain habitats. Commenters also suggested the development **of** comprehensive

species models and site-specific management standards for target species. Many comments related to the adequacy of the proposed standards for maintenance of viable populations and the need to preserve 'biological reserves' or 'old-growth' forests and riparian areas.

Final Plan Response: The list of MIS has been revised from that presented in the Draft Forest Plan and includes species chosen from the following categories:

- Federal and State threatened and endangered species (e.g., Lahontan cutthroat trout),
- Forest Service sensitive species (e.g., goshawk, spotted owl),
- Species with special habitat needs that may be influenced significantly by planned management programs (e.g., fisher, willow flycatcher),
- Species that are commonly hunted, fished, or trapped (e.g., mule deer, mountain quail), and
- Non-game species of unique or special interest (e.g., golden eagle, prairie falcon).

The standards and guidelines for hardwoods, riparian habitat, and down logs are modified from the Draft Forest Plan:

- the basal area of retained hardwoods in the mixed conifer hardwood stands is increased from 5 to 30 square feet per acre,
- there is a reduction in commodity uses, such as grazing, in riparian areas. Timber harvest will occur in riparian areas only to enhance amenity values or to accommodate needs for essential rights-of-way and occasional cableways, and
- more down woody material is retained on the forest floor for wildlife habitat needs.

The Forest Plan also presents a schedule for:

- establishing population objectives or sites for habitat management for MIS,
- developing habitat management prescriptions for each MIS,
- monitoring

The Forest Plan recognizes the importance of working closely with the California Department of Fish and Game and the US Fish and Wildlife Service as full partners in the Forest fish and wildlife habitat management program. Efforts to work cooperatively toward common goals benefit all aspects of the fish and wildlife program

Riparian/Streamside Management Zones

issue. The level of protection necessary to maintain sensitive riparian and streamside areas became a major issue during the public comment period

Draft Plan: The Draft Forest Plan provided for minimum protection of riparian and streamside management areas. Although the Draft Forest Plan provided for protection of water quality, it did not provide specific protection measures for intermittent streams on the steeper areas and did not emphasize riparian dependent resources.

The public response identified conflicts between commodity **uses** and riparian area protection. The concern expressed was that timber production and livestock grazing were being conducted in a way that was adversely impacting riparian-dependent resources such as fish and wildlife, water quality, and vegetative diversity

Final Plan Response: The Tahoe is a major contributor to the supply of clean water for the residents of Nevada and California. Sport fishing provides an important economic and social benefit along with the value of the water for municipal, industrial, and agricultural **uses**. It is critical to protect the Forest's watersheds, riparian areas, and fisheries habitats and to manage the other resources in a manner that does not degrade the habitats and water quality.

The Forest Plan provides for a higher level of emphasis for riparian and streamside management and adopts a variable-width streamside management zone (SMZ) for perennial streams, adjusting for site-specific situations. This concept meets National policy to emphasize protection of riparian-dependent resources and water quality. The Forest Plan provides for protection of intermittent stream SMZs on steep or cable-logging ground when projects are planned in order to maintain water quality, channel integrity, and riparian-dependent resources. A specific standard and guideline that establishes the amount of activity allowed in riparian areas and SMZs has been developed to direct management within these areas. Commodity production within the riparian areas and SMZs will be limited and secondary to management that emphasizes protecting riparian-dependent resources.

Soil Erosion/Long-Term Soil Productivity

Issue: The potential for intensive timber management to reduce soil productivity and contribute to soil erosion is a major public concern.

Draft Plan: The Draft Forest Plan provided for basic protection of soil productivity. The public expressed concern over the levels of timber harvest and grazing **use** and their effect on long-term soil productivity.

Final Plan Response: Based on the public comment and an interdisciplinary review of the standard in the Draft Forest Plan, additional Forestwide standards and guidelines to maintain soil productivity have been developed. Standards are set for soil organic matter, soil porosity, and soil loss. Each project will be developed within these standards and guidelines. A monitoring program will be used to improve the data base for future planning efforts, and to evaluate the effectiveness of the standards in meeting the objective of protecting long-range soil productivity.

Herbicides

Issue: The possible effect of herbicide **use** on ASQ, human health, water quality, fisheries, and other resource values is a major issue.

Draft Plan: Herbicides were assumed to be available for **use** when the Draft Forest Plan was released and the Draft Forest Plan assumed their **use**. The public expressed concern over the effects of herbicides on humans and natural resources.

Final Plan Response: The concerns raised by the public were addressed in a separate Regional Environmental Impact Statement on Vegetation Management for Reforestation and Record of Decision, dated February 27, 1989. Certain herbicides are now available for **use** by the Forests. Decisions to **use** herbicides or other vegetation management tools for reforestation will be based on site-specific environmental analyses.

Mt. Lola

Issue: The issue of winter sports development on Mt. Lola has been controversial for some time. The Tahoe has received a number of proposals to develop a major winter sports/year-round recreation complex.

Draft Plan: The Draft Forest Plan allowed for ski area development in the Mt. Lola area. Public comments ranged from support of ski area development to opposition to any development.

Final Plan Response: The Forest Plan manages the area to maintain its recreational attributes. The Forest Plan does not preclude development, but provides that the decision will be made after a separate study is conducted in compliance with the National Environmental Policy Act of 1969. The evaluation of any proposal will be coordinated with the Counties and State.

Former Roadless Areas

Issue: The management of former roadless areas not designated as Wilderness by the California Wilderness Act of 1984 is a major concern for many individuals and groups

Draft Plan The Draft Forest Plan provided for timber management in those areas with suitable timberlands and provided for a mix of motorized and nonmotorized recreational **uses** on high quality recreation lands

Many of the respondents supported protection of unroaded areas from road construction and timber harvest: others wanted to develop the unroaded areas for timber management and motorized recreational **uses**.

Final Plan Response: In the California Wilderness Act of 1984, the Granite Chief area was designated as Wilderness. This is the only Wilderness on the Forest There are no Further Planning Areas designated by the California Wilderness Act on the Tahoe The East Yuba, West Yuba, North Fork American River, Middle Yuba, Castle Peak, Bald Mountain, North Fork of Middle Fork American River, Duncan Canyon, Grouse Lakes, and Lakes Basin roadless areas were released for other multiple uses for this planning period. The Forest Plan provides for a mix of **uses** including managing for recreation those lands that provide high quality recreational experiences, while making highly productive timberlands available for timber management.

The following table summarizes the management of the former roadless areas for recreation as described by Recreation Opportunity Spectrum classes primitive (P), semi-primitive nonmotorized (SPNM), semi-primitive motorized (SPM), and roaded natural (RN)

AREA	P (acres)	SPNM (acres)	SPM (acres)	RN (acres)
Granite Chief	19,405	4,420	0	2,150
Castle Peak	0	0	8,370	931
Grouse Lakes	0	6,586	3,000	510
Lakes Basin	0	0	551	0
Bald Mountain	0	938	0	5,315
West Yuba	0	0	4,980	11,621
Duncan Canyon	0	870	0	7,833
North Fork of Middle Fork American River	0	0	10,000	653
North Fork American River	5,800	18,665	4,480	5,330
Middle Yuba	0	0	5,000	2,855
East Yuba	0	0	8,400	10,102
TOTALS	25,205	31,479	44,781	47,300

Those areas managed for P and SPNM recreation essentially would remain unroaded and could be available for wilderness consideration in the next round of planning. Those areas managed for SPM and RN recreational opportunities can be roaded to varying degrees depending on site-specific analysis RN and some SPM lands will be managed to contribute to the Forest's timber supply

Factors considered in making these decisions include the uniqueness of the areas and the values associated with managing an area for primitive and semi-primitive recreation opportunities. Some of the unroaded areas provide for primitive motorized activities utilizing existing low standard, primitive routes.

The value of providing semi-primitive recreation opportunities versus the need to reserve highly productive sites for timber management was considered. A number of the unroaded areas contain significant acreages of high volume timber stands. However, many of them are also more difficult and expensive to access and manage than the roaded areas of the Forest The suitability and operability of an area for timber

management needs to take into account the opportunity cost or economics of timber management. Finally, the decision on the management emphasis for an area is based on consideration of tradeoffs which include the value of the timber, including the cost of management, recreation values, and the potential for unacceptable environmental effects in some areas due to steep slopes and unstable soils.

Granite Chief

The unroaded area consists of 7,270 acres outside the Granite Chief Wilderness. Timber values are highest along the western boundary of the Wilderness and these lands are retained for timber management. The rest of the area has high recreation qualities and relatively low timber values. These lands are used extensively by hikers and backpackers and will be managed for SPNM. A small portion of the unroaded area includes the recommended Lyon Peak/Needle Lake Research Natural Area.

Castle Peak

This area has historically been used for a variety of OHV uses. This use will continue under the Forest Plan. The area has numerous 'low standard' roads or trails that are used by OHVs. Timber values in the area are relatively low while recreational values are high. The Castle Peak area includes a portion of the Mt. Lola area which has the potential for a winter sports area. The Mt. Lola area will be managed to keep the option open for possible winter sports development. As mentioned previously, any decision for winter sports development will be made through a project-level environmental analysis with full public and local government involvement.

Grouse Lakes

This high elevation area has some of the most outstanding recreational values on the Tahoe. The timber values in this area are generally low as compared to other areas on the Forest. The central core of the area will be managed for SPNM recreation such as hiking and camping, and the surrounding area for SPM recreation. Grouse Lakes is a popular area used by backpackers and day hikers. Parts of the area include significant amounts of private lands that require motorized access. In these areas, the Forest Plan provides for that access while still managing the adjacent lands for SPNM.

Lakes Basin

The Tahoe portion of this area is adjacent to the East Yuba area and is *to* be managed for SPM recreation consistent with adjacent lands. The unroaded area is also contiguous to a larger area on the Plumas National Forest. Management of the Tahoe portion is compatible with management of the Plumas area. The Forest Plan direction continues the existing management in the area.

Bald Mountain

This area includes the recommended Babbitt Peak Research Natural Area while the remaining area will be managed for timber and range management. The range and timber emphasis and the recommended Research Natural Area continue existing management direction.

West Yuba

The West Yuba area contains significant timber resources, particularly in the southern part, with high recreational values to the north. The resources and uses of this area are similar to the adjacent East Yuba area. As with the East Yuba area, the highly productive timber lands will be managed for timber and the remaining area for SPM recreation on designated routes.

Duncan Canyon

Duncan Canyon is primarily managed for intensive timber management. The area contains significant timber resources including several tracts of mature and overmature timber. The timber resources in the area are an important contributor to the Tahoe's timber supply.

North Fork of Middle Fork American River

The Draft Forest Plan proposed this area for intensive timber management. Based on public response the management direction has been changed to provide for 'back-country' motorized recreation or SPM classification. The reasons for the changes are to provide for additional SPM recreation in a rugged canyon area and to help meet the demand for SPM recreation. The motorized recreation **use** will be dispersed throughout the area and will occur primarily on existing trails. This change affects 6,433 acres of suitable timber lands, although most of the suitable timber lands are on steep and rocky slopes.

North Fork American River

The major changes from the Draft Forest Plan are to increase visual protection along the North Fork American Wild River and to provide additional SPNM recreation opportunities. The Forest Plan provides for a visual quality of retention as seen from the river to the top of the slope on both sides of the canyon. SPNM recreational opportunities are provided to mid-slope on the south side of the river and all the way to the top on the north side of the canyon. This area provides for quality primitive and SPNM recreational experiences and will help meet the increasing public demand for this type of recreation. Because of high timber values and the ability to mitigate visual impacts, the upper slopes on the south side will be managed for timber where compatible with visual quality objectives.

Middle Yuba

The area on the north side of the Middle Yuba River will be managed for SPM recreation while the area south of the Yuba will be split between emphasis on SPM recreation and intensive timber management. These land allocations will help meet the demand for SPM recreation use. Due to the steep terrain the motorized recreation **use** will occur mostly on existing roads and trails. Suitable timber lands on steep slopes which are difficult to manage for intensive timber management have mostly been allocated to SPM. The river has been determined to be eligible for classification as part of the Nation's Wild and Scenic River system. The river corridor will be protected to retain options until a suitability study and decision on classification is made.

East Yuba

Two thirds of this area, the more productive lands, will be managed for intensive timber management. The remaining third, the higher quality recreation lands, will be managed for SPM recreation. Efforts have been made to refine the management area boundaries to better reflect conditions on the ground in response to public comments. The timber and recreation emphasis reflect the values in this area.

Urban/Rural/Wildland Interface

Issue: The need to coordinate with private landowners adjacent to or near National Forest System lands in order to reduce potential conflicts has become more apparent.

Draft Plan: The Draft Forest Plan did not address this issue specifically. This issue emerged as part of the public response to the Draft Forest Plan.

Final Plan Response: The Forest Plan identifies the need to work cooperatively with neighboring land owners and local and State governments, to address the numerous issues related to the development and **use** of private lands adjacent to and within National Forest System lands. Specific direction is provided by adding a Standard and Guideline to reduce the potential for future conflicts and resolve existing conflicts through cooperative planning and problem solving. The emphasis of this direction is to improve communication and coordination with all levels of government and with individuals.

Visual Quality

Issue. This issue deals with the degree of visual change considered acceptable by the public

Draft Plan: The Draft Forest Plan protected visual quality in those areas considered most sensitive to the public, such as major travel routes and heavily used recreation areas

Some of the public argued that visual quality should be maintained at its highest levels, while others were concerned about the effects that visual resource protection would have on timber management and timber supply.

Final Plan Response: The Forest Plan increases protection of visual quality along heavily used secondary roads and overlooks, such as the views overlooking the North Fork American Wild River. Specifically, the Forest Plan increases protection of visual resources over that proposed in the Draft Forest Plan by protecting foreground views along important collector roads and trails and by protecting middle ground and background views as seen from key scenic overlooks. These actions are designed to improve the overall visual quality of the Forest, an important attribute, which directly relates to the experience enjoyed by the public visiting the Forest. The importance of visual quality to the public was clearly demonstrated by the large number of comments concerning visual quality received in response to the Draft Forest Plan.

Budget

Issue: The public expressed a concern regarding the potential effect of a reduced budget on Plan implementation.

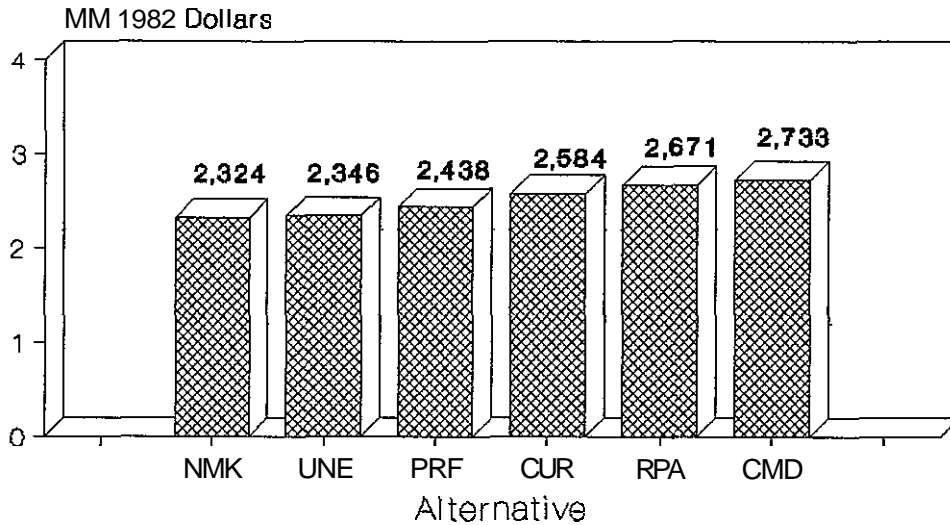
Draft Plan. The Draft Forest Plan proposed a budget of 21.0 million dollars. A number of commenters were concerned that there will be a change in the mix of resource programs if the budget is reduced.

Final Plan Response: The Forest Plan is primarily a land allocation document. It tells how each area will be managed if funds are available. The Forest Plan describes specific funding levels to achieve plan objectives. Most plan objectives are based on programs where funding is allocated by Congress. Examples of these are the timber sales program, outputs associated with construction of recreational developments, and wildlife and range improvement projects. Other forest uses, such as recreation use, fishing and hunting use, and wilderness use is expected to continue regardless of funding levels, but at a lower level of quality. If the budget is reduced, the Tahoe's first funding priority is to maintain soil productivity and water quality, including monitoring.

B. Economic Efficiency of Alternatives

The Commodity and RPA Alternatives have the highest present net value (PNV), because they produce more timber, followed by the Current, Preferred, as modified, Uneven-aged, and Nonmarket Alternatives. However, the alternatives with the highest PNV do not adequately reflect the values for some amenity resources. If these high PNV alternatives were implemented, visual quality, water quality, and both plant and animal diversity would be reduced as compared to the Preferred Alternative, as modified. The reduction of about 13 MMBF in ASQ neither significantly changes the PNV nor the relationship of the Preferred Alternative, as modified, to the other alternatives, as displayed in the following table.

Comparison of Present Net Value



C. Contribution to the Regional Production of Goods and Services

The Preferred Alternative, as modified, will manage and protect all resources while providing substantial opportunities for recreation, wildlife, forage, timber, and fuelwood needed for local economic growth and stability. It provides a continued level of all outputs, while protecting both the soil and water resources and responding to both public preferences and legal mandates. The recreation opportunities, minerals, range, wildlife, and timber outputs will benefit the entire State of California and Western Nevada.

D. Social and Economic Stability

Effects on jobs, revenues, recreation opportunities, fuelwood availability, resource protection for future generations, and social and economic stability for people living in Sierra, Nevada, Placer, Yuba, Butte and Plumas Counties, were considered in selecting the Preferred Alternative. Public lands make up a large percentage of the total land base in most of these counties, and the commodity and non-commodity resources provided by the Forest significantly affect the livelihoods and quality of life of many of their residents. Wood products employment constitutes a substantial share of all employment in Sierra and Plumas Counties, and revenues produced from all activities on the Forest are important sources of funding for local County schools and roads. The Preferred Alternative, as modified, provides for 5493 worker years of employment annually.

The Forest Plan manages grazing at approximately current levels and slightly reduces the available supply of timber. The Forest Plan also provides for a wide range of recreation opportunities while increasing protection for wildlife, soil and water resources, and visual quality. The level of outputs will not significantly affect historical uses of the Tahoe nor will the Preferred Alternative, as modified, significantly affect lifestyles of the public who use and enjoy the Forest. The Tahoe will follow a policy of non-discrimination in providing work, recreation, and educational experiences for the community and will promote active participation by all segments of the public. With implementation of the Preferred Alternative, as modified, no changes in outputs will result that would create significant social or economic impacts.

E. Environmentally Preferable Alternative

I judge the Nonmarket and Uneven-aged Alternatives both to be environmentally preferable alternatives. Both emphasize protection of water, soil, riparian areas, air, visual quality, enhancement of wildlife habitat, and diversity. These two alternatives differ in that the Nonmarket Alternative prescribes no herbicides, provides more protection to visual quality, water quality, and forest diversity than the Uneven-aged Alternative, while the Uneven-aged Alternative has slightly higher benefits to riparian areas while harvesting timber on

fewer acres of steep or cable ground. Site disturbance is **less** in both alternatives than the Current Alternative. The main reason for not selecting either of these alternatives is that I believe that the additional timber opportunities included in the Preferred Alternative, as modified, can be utilized while protecting other environmental values. The Preferred Alternative, as modified, provides the greatest net public benefits of all the alternatives, and a higher PNV than either the Nonmarket and Uneven-aged Alternatives.

F. Compatibility with Goals and Plans of Other Agencies

The goals and plans of other agencies were considered throughout the planning process. The **FEIS** and Forest Plan reflect this consideration and the comments received from public agencies during the public review period. The Forest Plan is compatible with other agency goals and plans. Federal agencies commenting on the Draft were the **US**. Fish and Wildlife Service, the Department of Interior, and the Environmental Protection Agency. State agencies included the Departments of Parks and Recreation, Water Resources, Fish and Game, Forestry, and Transportation, the Lahontan Regional Water Quality Control Board, the State Board of Forestry, and the Office of Historic Preservation. Local governments and agencies and elected officials also provided comment on the **DEIS** and Draft Forest Plan.

Public input provided much worthwhile information and demonstrated the need for coordination. The participation of representatives from the timber industry and environmental organizations assisted the Forest in looking at alternative ways to address the issues. Dialog with other Federal agencies, State and local governments, and the interested public will continue. Ongoing involvement by interested parties is critical to successful Forest Plan implementation. As more site-specific planning is done, the Tahoe will continue to involve the public.

V. IMPLEMENTATION, MITIGATION OF IMPACTS, AND MONITORING

The Forest Plan will not **be** implemented sooner than 30 days after the Notice of Availability of the Forest Plan, **FEIS**, and Record of Decision appears in the Federal Register. The time needed to bring all activities into compliance with the Forest Plan will vary depending on the type of project. As soon as practicable after approval of the Forest Plan, the Forest Supervisor shall ensure that, subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements and other instruments for occupancy and **use** of affected lands are consistent with the Forest Plan. The Forest Supervisor shall also assure that (1) annual program proposals and projects are consistent with the Forest Plan, (2) program budget proposals and objectives are consistent with management direction specified in the Forest Plan, and (3) implementation is in compliance with the Regional Guide and applicable regulations.

As a long-range management guide for the Forest, this Forest Plan is a programmatic document and does not make site-specific project decisions or set specific resource outputs. During Forest Plan implementation, when the various projects are designed, site-specific analyses will be performed in compliance with the National Environmental Policy Act of 1969. These analyses may result in environmental assessments, environmental impact statements, or categorical exclusions and, possibly, an amendment or revision of the Forest Plan. Many of these documents will be tiered to the Final Environmental Impact Statement for this Forest Plan pursuant to **40 CFR 1508.28**.

Implementation will be guided by individual Management Area direction and by the management requirements contained in the goals, objectives, standards and guidelines, practices, and prescriptions that are found in Chapter V of the Forest Plan. These management requirements were developed through an interdisciplinary effort and contain measures necessary to mitigate or eliminate any long-term adverse effects. To the best of my knowledge, all practical mitigation measures have been adopted.

Outputs associated with Forest Plan implementation may be adjusted as a result of research efforts that produce new information and technologies. Air quality, prescribed fire, riparian trend studies, wildlife habitat studies, and other data will enhance and affect Forest Plan implementation. Management direction contained in the Forest Plan will be used to analyze any proposal involving **use** of Tahoe National Forest lands.

The purpose of the monitoring program is to evaluate whether the Forest Plan goals and objectives are being met, to determine how closely management requirements are being followed, and to assist in assessing

achievement of the environmental standards. The results of monitoring and evaluation will be used to measure the progress of Forest Plan implementation. These results will also help to determine when Forest Plan amendments or revisions are needed.

VI. PLANNING RECORDS, AMENDMENTS AND REVISIONS, AND ADMINISTRATIVE REVIEW

A. Planning Records

Planning records contain detailed information and document decisions used in developing the Forest Plan and EIS as required in 36 CFR 219.12. All of the documentation detailing the Forest planning process is available for inspection during regular business hours at:

Forest Supervisor's Office
Tahoe National Forest
Highway 49 and Coyote Street
Nevada City, California 95959

These records are incorporated by reference into the EIS and Forest Plan.

B. Amendments and Revisions

The National Forest Management Act requires revision of the Forest Plan at least every 15 years. The Forest Plan may be revised sooner whenever the Forest Supervisor determines that conditions or demands in the area covered by the Forest Plan have changed significantly, or when changes in National policies, goals, or objectives, such as special Congressional land designations, catastrophic events, or major new management or production technologies, would have a significant effect on programs of the Tahoe. All procedures set forth in 36 CFR 219.12 will be followed. This includes scoping, an analysis of the management situation, formulation of alternatives, an estimation of effects, an evaluation of alternatives, identification of a preferred alternative, documentation in a Draft EIS and Draft Forest Plan, and formal public comment before approval and implementation of the revised plan.

The Regional Forester approves any significant amendments to this Plan while the Forest Supervisor has the authority to approve non-significant amendments. The determination of significance or non-significance will be documented in a decision notice. No changes will be implemented prior to appropriate public notice. Determinations of significance or non-significance are appealable under 36 CFR 217.

C. Right To Administrative Review

This decision is subject to appeal in accordance with the provisions of 36 CFR 217. Any written notice of appeal of this decision must be fully consistent with 36 CFR 217.9, 'Content of a Notice of Appeal', including the reasons for appeal. Notice of appeal must be filed within 90 days of the date of the published legal notice (Sacramento Bee, Sacramento, CA) of this decision and filed with:

F. Dale Robertson, Chief
Forest Service - Appeals
U.S. Department of Agriculture
South Bldg., 12th & Independence Ave., S.W.
Washington, DC 20250

A copy of the appeal must be sent simultaneously to:

Paul F. Barker
Regional Forester
Pacific Southwest Region

A copy of the appeal must be sent simultaneously to

Paul F Barker
Regional Forester
Pacific Southwest Region
USDA Forest Service
630 Sansome Street
San Francisco, California 94111

Appellants must submit two copies of a Notice of Appeal to each officer when the Notice is more than ten pages in length.

My recommendation for Research Natural Area (RNA) designation for Babbitt Peak, Sugar Pine Point, and Lyon Peak/Needle Lake is not appealable. The Chief decides on RNA establishment. Specific decisions regarding interim management of RNAs pending a final decision by the Chief are appealable

An appeal of my decision does not halt Forest Plan implementation. Requests to stay the approval of this Plan, prepared pursuant to 36 CFR Part 219, shall not be granted. However, where a project or activity would be implemented before an appeal decision could be issued, the Chief of the Forest Service will consider written requests to stay implementation of that project pending completion of the review of the Forest Plan appeal



PAUL F. BARKER

Regional Forester



Date

**END
OF
PHYSICAL
FILE**